
DEPARTMENT OF PUBLIC WORKS

ANNUAL REPORT

2006

**CITY OF HARRISBURG
COMMONWEALTH OF PENNSYLVANIA**

CITY OF HARRISBURG
DEPARTMENT OF PUBLIC WORKS
2006
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**CITY OF HARRISBURG
DEPARTMENT OF PUBLIC WORKS
2006**

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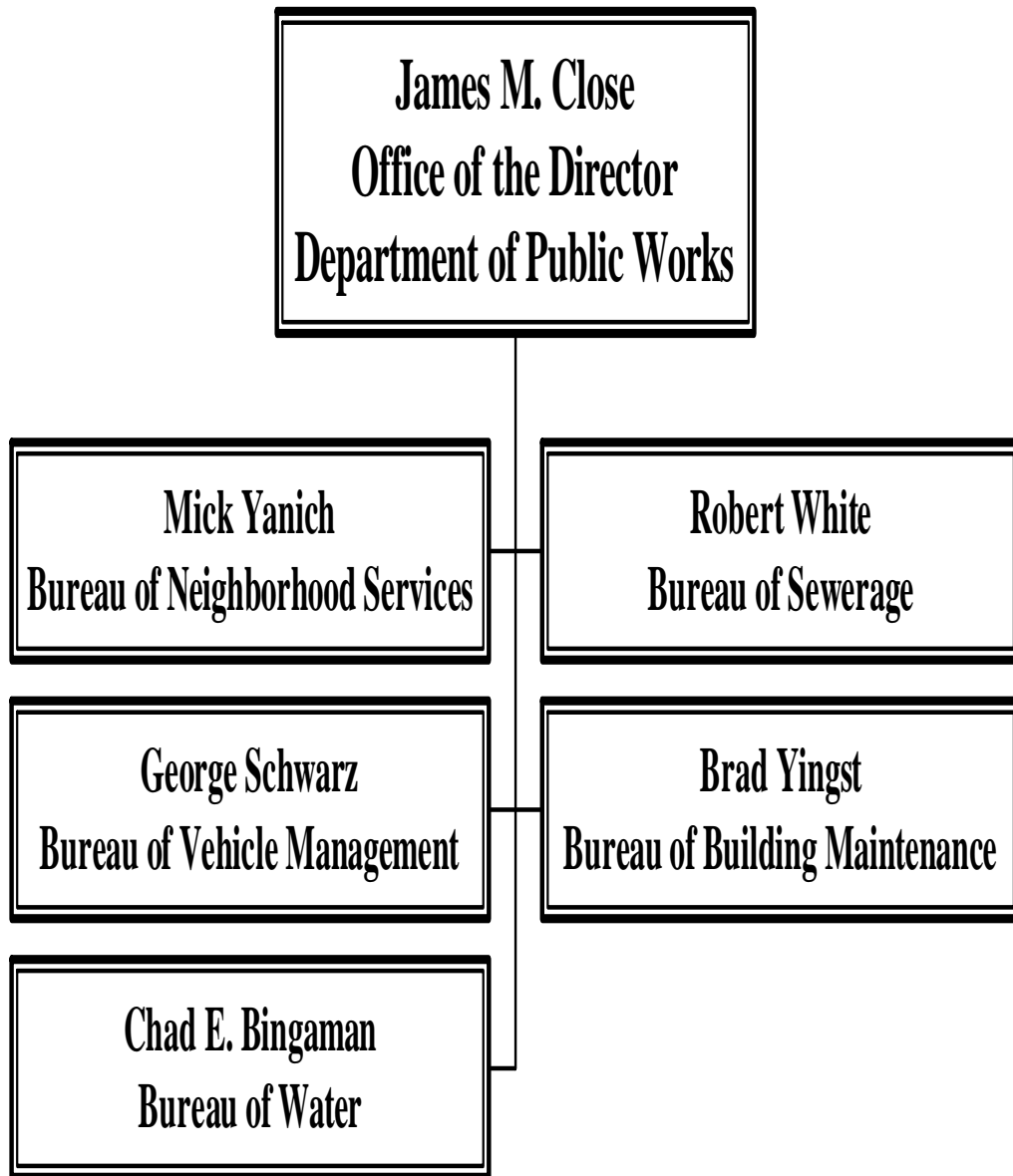
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CITY OF HARRISBURG

DEPARTMENT OF PUBLIC WORKS

ORGANIZATIONAL CHART



BUREAU OF NEIGHBORHOOD SERVICES

MICHAEL T. YANICH – DIRECTOR

DENNIS C. HOWE – DEPUTY DIRECTOR

AARON K. JOHNSON – DEPUTY DIRECTOR

Barricades

Barricades are distributed throughout the City for various social events and special City events. In 2006 a total of 1,279 barricades were distributed for 121 different events. The amount of barricades and events per month are listed below:

Month	Sets of Barricades	Events
January	67	4
February	8	2
March	63	8
April	51	9
May	103	9
June	138	16
July	244	20
August	102	16
September	250	14
October	118	14
November	21	3
December	114	6

Bulk for Charge

In 2006 the Bureau removed bulk items from residents for a minimum charge per item. This program served a two-fold purpose. First it gave the residents a means of getting rid of unwanted bulk items and second it somewhat slowed the illegal dumping of bulk items throughout the City. \$2,998.00 was collected during the year. The dollar amount of revenue produced by month is listed below:

January	\$ 240.00
February	\$ 330.00
March	\$ 187.00
April	\$ 320.00
May	\$ 255.00
June	\$ 200.00
July	\$ 352.00
August	\$ 304.00
September	\$ 260.00
October	\$ 210.00
November	\$ 235.00
December	\$ 105.00

Demolition

23 properties were demolished in 2006. The locations by month are listed below:

January—1516 Regina

February—1534 Regina / 1633 Regina

March—38 Linden

April—2204 & 2206 N. 6th

May—1365 Howard / 2426 & 2428 Jefferson

June—436 Peffer / 2450 Reel

July—0

August—46 N. 12th / 1417 & 1419 Liberty

September—1416 Liberty / 1344 & 1346 Liberty

October—553 Curtain & 2547 N. 6th

November—1541 N. 6th

December—322 & 324 Hummel / 1138 Market

Illegal Bulk

Illegal Bulk items are collected throughout the year from streets, alleys, or anywhere else that people decide to dump bulk items to avoid the cost of disposing of them. A clam truck or a front-end loader with 5-ton dump trucks are used to pick these items up. Total for the year of 418.80 tons was collected in 120 workdays. The following list is of the tons collected by month:

January	16.54
February	2.74
March	11.49
April	38.48
May	74.23
June	45.72
July	28.29
August	109.48
September	53.26
October	13.57
November	2.34
December	22.66

Potholes

Potholes are filled throughout the year in all areas of the City. Potholes are located by daily observations and phone in complaints. We assign a two-man crew with shovels, rakes, and a tamper to compact the asphalt into the holes. Potholes were filled on 51 days in 2006 using 79.18 tons of asphalt. The following list is of the days scheduled per month and tonnage of asphalt:

Month	Days	Tons
January	4	7.06
February	10	26.34
March	4	6.73
April	7	6.98
May	8	10.71
June	12	15.66
July	1	1.06
August	1	1.08
September	3	3.06
October	0	0
November	0	0
December	0	.50

Street Cleaning

Street cleaning is done year round and includes street sweeping, salting and plowing, and leaf removal. In 2006, 557.075 tons of leaves were collected and 1,650.40 tons of street sweeping debris was collected. Seventeen shifts were needed for salting and plowing to combat 26.6 inches of snow between January and February. The following list is of the street sweeping debris and leaves collected in tons by month:

January	363.21 tons	24.43 tons/leaves
February	127.10 tons	0 leaves
March	180.135 tons	0 leaves
April	78.90 tons	0 leaves
May	81.84 tons	0 leaves
June	59.97 tons	0 leaves
July	54.99 tons	0 leaves
August	56.125 tons	0 leaves
September	94.26 tons	6.26 tons/leaves
October	132.27 tons	95.29 tons/leaves
November	322.05 tons	305.57 tons/leaves
December	171.54 tons	125.525 tons/leaves

Christmas Trees

832 Christmas trees were collected from residents in January of 2006. The trees are collected by two-man crews and taken to the salt pile area at the Advanced Wastewater Treatment plant, where the Parks Maintenance crews chip them up for mulch.

Special Cleanups

Three special cleanups were performed by the Bureau in 2006. All of these special cleanups were in cooperation with the Community Action Commission.

They were conducted in March, April & June and the total of 39.78 tons of bulk and debris was collected.

Flood Cleanup

The bureau assisted with flood cleanup on City Island in July. Four 5-ton dump trucks of debris were removed and all sweepers and flushers were used to clean up the paved surfaces.

Snowstorms

In early 2006, we only had to deal with one major snowstorm. This storm dropped 7.5 inches of snow on February 11th and 12th.

Televised Sewers

The Bureau televised 9 Sanitary Sewers in 2006. The following list of lines televised by month.

Month	Location	Cause
March	300 block of Market 1800 block of Derry 2 nd & Muench	Sinkhole Depression Collapsed Sewer
June	216 Herr	Problem in main sewer
July	Hershey Ice Cream 216 Herr 200 block of Liberty	Sewer backup Identify all connections Sinkhole
August	Hbg. Trans. Center 15 th – Zarker to Chestnut	Sewer Problem Sinkhole

Sanitary Sewers

The Sanitary Sewer System is checked on a daily basis to keep water flowing throughout the main lines in the system. The following list is of the manholes that needed special attention during the year either by adding chemicals to break up grease or other solids, or using a long pole to move paper back into the main flow channels:

7 th and Antoine –	15 times	3 rd and Wiconisco –	16 times
Hale and Rudy –	12 times	29 th and Heather –	15 times
385 Yew –	13 times	5 th and Peffer –	12 times
2264 Kensington –	12 times	Carey and Market –	12 times
2972 Heather –	12 times	2233 Kensington –	12 times
Thomas and Market –	12 times	19 th and Primrose –	12 times
22 nd and Kensington –	18 times	20 th and Derry –	12 times
Goodyear and Knox –	12 times	2230 Green –	12 times
2737 N. 4 th –	12 times	640 S. 25 th -	12 times
Jefferson and Woodland –	12 times	5 th and Antoine –	12 times
2230 Kensington –	14 times	2964 Heather –	12 times
2734 Reel –	14 times	Dunkle and Derry –	12 times
17 th and Revere –	13 times	Waldo and Radnor –	12 times
2600 block of Green –	15 times	17 th and Hunter –	12 times
2500 block of Green –	13 times	Cameron and Elliot -	12 times
2 nd and Vine –	13 times	15 th and Liberty –	12 times
Croyden and Wyatt –	13 times	19 th and Mulberry –	12 times
Turner and Emerald –	13 times	2200 block of Swatara –	12 times
Hudson and Pemberton –	4 times	21 st and Chestnut –	4 times
17 th and Putnam –	14 times	Rolleston and Pemberton –	6 times
17 th and Boas –	6 times	2700 block of Green –	12 times
22 nd and Chestnut –	2 times	15 th and Bypass –	6 times
5 th and Woodbine –	6 times	1100 block of Herr –	6 times

Sanitary Sewers cleaned by the Vactor

January – 373 Benson/2400 Kensington/1335 N. 14th/2972 Heather

February – 1635 Herr/1150 Derry/2235 Adrian/2600 Waldo/2052 Chestnut
17th & Putnam/ 1800 Derry/1527 S. 12th

March – 3rd & Radner/208 S.18th /2870 Rumson/2630 Waldo/537 Curtain/1800 Derry
2966 Croyden/206 S. 13th/3rd & Wiconisco/2600 N. 3rd

April –3200 Pennwood/1501 Allison/1339 N.15th/22 & Kensington/915 N. 15th/2200 Adrian
1532 Naudain/2362 Kensington/2901 N. 6th.

May – 526 Pfeffer/1921 Brookwood/2127 Jefferson

June – 2246 Kensington/2200 Adrian/1623 Swatara/200 Liberty/216 Herr/534 Dunkle
1208 S. 18th/1833 Spencer

July – 1400 Cloverly/200 Block of Herr/1000 N. 2nd/216 Herr/1800 State/2966 Wilson Parkway
1208 S. 18th

August – 22nd & Kensington/1208 S. 18th/1223 N. 16th/29th & Heather

September – 2645 Green

October – 2737 N. 4th/1208 S. 18th/1001 Market/2400 Berryhill

November – 2400 Kensington/1711 Wayne/1208 S. 18th/2033 Green/504 Edward

December – 2400 Kensington/17th & Compass/1208 S. 18th

Trash Collection

The Sanitation Division collects Trash and Recycling throughout the year. The following list is of the Trash, Recycling, and Sidewalk Receptacles emptied by tons:

Month	Trash	Recycling	Sidewalk Receptacles
January	2,464.09	139.76	5.34
February	2,214.93	135.18	5.34
March	2,500.31	139.68	5.34
April	2,415.06	134.90	5.34
May	2,690.24	150.86	5.34
June	2,809.84	149.76	5.34
July	2,620.64	148.80	5.34
August	2,594.96	140.19	5.34
September	2,476.72	135.53	5.34
October	2,525.01	138.29	5.34
November	2,664.52	141.47	5.34
December	2,444.27	134.03	5.34
Totals	30,420.59	1,688.45	64.08

VMC CHARGES

MONTH	FUEL	OIL	PARTS	TIRES	LABOR	LUBE
January	\$12,630.57	\$122.00	\$15,368.66	\$2,736.59	\$21,614.38	\$48.00
February	\$11,313.53	\$150.10	\$10,107.90	\$1,006.16	\$11,415.09	\$24.00
March	\$7,161.01	\$0.00	\$11,567.80	\$713.12	\$9,321.81	\$48.00
April	\$10,146.42	\$0.00	\$28,018.51	\$666.14	\$25,025.93	\$8.00
May	\$13,717.23	\$168.75	\$5,314.02	\$797.23	\$6,756.50	\$0.00
June	\$11,119.10	\$157.50	\$8,318.04	\$253.23	\$8,864.50	\$80.00
July	\$9,553.36	\$10.60	\$11,760.34	\$1,236.68	\$15,186.13	\$32.00
August	\$11,172.53	\$1,136.24	\$7,985.06	\$929.64	\$6,612.98	\$16.00
September	\$9,941.05	\$1,023.27	\$7,781.55	\$1,412.32	\$9,741.14	\$56.00
October	\$9,348.04	\$1,394.51	\$7,064.69	\$1,491.07	\$12,519.63	\$64.00
November	\$11,039.30	\$1,360.30	\$4,630.55	\$3,149.05	\$10,897.21	\$16.00
December	\$9,616.44	\$1,858.98	\$39,042.34	\$1,641.67	\$6,708.75	\$16.00
GRAND TOTAL	\$452,196.74					

TRAINING

The following list is of the Safety Training that the Bureau participated in during 2006

January – Right to Know – 19 employees

February – None

March – Work Zone – 15 employees

April – National Incident Management System – 19 members

May - December – None

Storm Inlets Repaired

The following list is of the Storm Inlets that were repaired throughout the year:

June – Parking lot Civil War Museum / 15th & State (NE)

August – Susquehanna & Forster (NW) / 20th & Market (NE) / 17th & Mulberry (NW)
2nd & Briggs (NE) / 16th & Herr (SW)

September – Evergreen & Chestnut

December – 13th & Market (NE) / 17th & Market (NE)

Manholes Replaced

January – 516 Benton

February – Hudson & Caledonia

Storm Inlets Cleaned by Vactor

January – 3 City Island

April – 18th & Regina/18th & Park

May – 3226 N. 6th/1186 Bailey/Derry & Sylvan/16th & Catherine

June – 200 Block of Liberty (2)/Civil War Museum/Jefferson & Division

July – 4th & Strawberry

October – 2nd & Geiger (NW)/16th & Naudain (NE & SE)/19th and Holly (NE & NW)

November – 4th & Emerald/18th & Holly (NE & SE)/Reel & Schuykill (NW)

December – 12th & Berryhill (NW)/17th & Market (NE)/13th & Market (NE)/15th & Market (SE)
4 on Market at CAT bus drop off zone between 4th & 5th

Sinkholes

The following list is of the Sinkholes repaired in 2005 and the materials needed to restore the road surfaces:

Month	Location	Tons of Stone	Tons of Asphalt
March	1402 Wyeth	15.23	2.62
April	Calder & Penn	5.46	2.03
	1700 Block Berryhill	17.02	3.88
May	16 th & Chestnut	9.46	7.49
	15 th & Drummond	17.86	7.02
June	200 Block of Liberty	4.67	4.05
July	200 Block of Herr	496.34	176.85
	Replaced 273 feet of sewer		
August	20 th & Market	7.54	1.08
	Replaced 12 feet of sewer		
September	119 Balm	11.51	1.98
October	3 rd & Woodbine	18.77	1.48
	2 collapsed inlet laterals		

<u>Monthly Savings</u>				
Month	Eliminated Routes	Suspensions	Recycling	Sinkhole Repair
January	\$7,156.60	0	0	
February	\$6,798.77	0	0	
March	\$8,230.09	0	\$698.55	
April	\$7,156.60	0	\$3,072.20	
May	\$7,872.26	0	\$3,428.82	
June	\$7,872.26	0	\$3,406.82	
July	\$7,156.60	0	\$3,387.62	\$42,143.74
August	\$8,230.09	0	\$3,277.16	
September	\$7,156.60	0	\$3,122.21	
October	\$7,514.43	19 days \$3,091.68	\$3,197.98	
November	\$6,798.77	19 days \$3,091.68	\$3,220.42	
December	\$6,798.77	0	\$3,071.62	
TOTALS	\$88,741.84	\$6,183.36	\$29,883.40	\$42,143.74
GRAND TOTAL	\$166,952.34			

Employee Roster

Aviles, Mariano
Bradley, George
Chacon, Hector
Diaz, Richard
Garcia, Rafael
Gingrich, William
Hernandez, Carlos
Irvin, Joe
Keller, Rodney
McDonald, Lawrence
Neff, Dale
Pacheco, Jose
Ross, Gary
Shatto, Paul
Sowers, Harry
Spriggs, Nathaniel
Stimeling, William
Thompson, Del
Washington, Darryl
Watlington, Daniel
Zellers, Eric

Barber, Kenneth
Bruno, James
Colon, Luis
Fox, Michael
George, Herbert
Halty, Percy
Hildum, James
Kazhdan, Yevgeniy
Marks, Calvin
McMillen, Christopher
Nye, Michael
Robinson, James
Roy, Clarence
Shemory, Dennis
Spiroff, David
Steele, Clark
Taylor, Edward
Vargo, Alan
Washington, Michael
West, David
Zenon, Ramon

Leave Used

<u>January</u>	892
<u>February</u>	416
<u>March</u>	502
<u>April</u>	500
<u>May</u>	492
<u>June</u>	566
<u>July</u>	535
<u>August</u>	547
<u>September</u>	697
<u>October</u>	692
<u>November</u>	682
<u>December</u>	792
<u>Total Days</u>	7,313

Neighborhood Services

Traffic Division

No	Parks And Recreation	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
1	River Front Park (Hrs.)					26	124				2	2	32	186
2	City Island (Hrs.)	5	2	329	117	163	65	74	7	20	8	5		795
3	Reservoir Park (Hrs.)		1								6			7
4	Kunkle Plaza (Hrs.)	18											16	34
5	Walnut Street Bridge (Hrs.)				78		7		3		4			92
6	Banner Installation / Removal (Hrs.)	6	2	11	59							21	26	125
7	Accent / Tree Lighting (Hrs.)										179	76		255
8	Christmas Decorations (Hrs.)	43					2			9	64	171	33	322
9	Miscellaneous (Hrs.)			8	6	2	1						3	20
10	Sunken Gardens / Italian Lake (Hrs.)				4	11		3			2			20
11	Pool # 1 & 2 (Hrs.)						3				1			4
12	Various Parks (Hrs.)	1	25	2										28
13	Special Events (Hrs.)					157	83	108	93	52		3	4	500

No	Traffic Pavement Markings-Inlaid	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
1	Stop Bars (LF)													0
2	Lain Arrows (EA.)													0
3	Crosswalks (LF)													0
4	Long Line (LF)													0

No	Traffic Pavement Markings-Thermoplastic	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
1	Stop Bars (LF) 12"													0
2	Stop Bars (LF) 24"						57							57
3	Lane Arrows (LF)													0
4	Crosswalks (LF) 6"													0
5	Crosswalks (LF) 8"						184		739					923
6	Long Line (LF)													0
7	Pavement Marking (Hrs)													0

Neighborhood Services

Traffic Division

No	Traffic Pavement Markings-Paint	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
1	Parking Stalls (LF)													0

No	Parks And Recreation	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
1	Public Works Office (Hrs.)													0
2	City Services (Hrs.)			9	8						2	36	10	65
3	VMC (Hrs.)	1	2		5								7	15
4	Sanitation (Hrs.)	40	32	8					8					88
5	Water (Hrs.)									4				4
6	Steam Plant (Hrs.)													0
7	Sewerage (Hrs.)													0
8	City Hall Building Maintenance (Hrs.)	4	8	1		4		2					7	26
9	Data Processing/Wireless Comm. (Hrs)													0
10	Comm. Center Alarm System (Hrs.)	5			3									8
11	Police Bureau (Hrs.)							3	160	2				165
12	Fire Bureau (Hrs.)													0
13	Fire Museum (Hrs.)												1	1
14	Fire Alarm Cable Removal (Hrs.)					81	20	76					20	197
15	Engineering (Hrs.)	13				4	1		7		40			65
16	Directional Signs (Hrs.)	39	161	21	122	81	106	10			2	1	23	566
17	Parking Authority (Hrs.)													0
18	Special Project Signs (Hrs.)	7												7
19	Flood Prep/Damage (Hrs.)						6	60						66
20	National Civil War Museum (Hrs.)													0

Neighborhood Services

Traffic Division

No	Parks And Recreation	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
1	Stop Signs	5	2	11	2	1	1	7	11	4		4	8	56
2	Stop / Signal Ahead Signs							2						2
3	One Way Signs	1	5	5	2	1			1	2	7		1	25
4	No Parking Any Time Signs	2	2	5	4	1	1		3	2	3	1	1	25
5	Speed Limit Signs	1		1							2	2	1	7
6	Handicap Parking Signs					2			1		2			5
7	Loading Zone Signs	3	2			2								7
8	Street Cleaning Signs			15		1		6	25	1	23		2	73
9	Street Name Signs	12		6	4		2	4		4	8			40
10	Snow Emergency Signs			1							1			2
11	Drug Signs													0
12	Adopt-A-Block Signs (Lot)					6	2	1	2					11
13	Do Not Enter Signs			1					1	1	2			5
14	Permit Parking Signs													0
15	Watch Children Signs			2										2
16	Yield Signs													0
17	Right/Left Lane Must Turn Signs									1	1			2
18	No Right/Left Turn Signs													0
19	Playground Signs										1			1
20	Slow Signs													0
21	School Crossing Signs			1										1
22	School Signs													0
23	All Traffic Must Turn Right/Left									1				1
24	Crime Watch Signs													0
25	Signs for Parks & Rec.		6											6
26	Signs for Public Works													0
27	Special Projects Signs													0
28	Truck Signs													0
29	3-Way/4-Way Signs	3						4				1	4	12
30	Ped Signs									4				4
31	Fine Signs for H/P Signs					2					1			3
32	Miscellaneous Signs						2		7	9	5			23
33	No Outlet Signs													0
34	Tow-Away-Zone Signs													0
35	Arrow Signs	3				1	1							5
36	No Turn Signs													0
37	No U-Turn Signs													0
38	Keep Right/Left Signs									1				1
39	Signs for City Hall													0
40	Signs for Police / Fire													0
41	Signs for Water Dept													0
42	Signs for AWTF													0
43	Signs for Steam Plant													0
44	N.C.W.M. Signs													0
45	Way Finder Signs													0

Neighborhood Services

Traffic Division

No	Office/Other	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
1	Administrative Division (Hrs.)	29	6	23	8	6	7	7	16	1	12	9	8	132
2	Shop Work (Hrs.)	16	10	2	34	6		7	14	24	12	1	40	166
3	Install & Repair Radios (Hrs.)	4	8			2					3			17
4	PA-One-Call Locates (Hrs.)	21	18	29	23	31	37	14	17	14	15	11	6	236
5	Vehicle Preventive Maintenance (Hrs.)	22	22	20	24	23	21	19		18	17	15		201
6	Building Maintenance (Hrs.)	2									5			7
7	Snow Removal (Hrs.)													0
8	Public Works Misc. (Hrs.)	13	41		11		6		19		27		2	119
9	Safety Committee (Hrs.)													0

No	Traffic Signals	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
1	Emergency Call Outs	4	2	2	1	3	7	11	6	8	4	3	3	54
2	Preventive Maintenance/Relamp (Hrs.)	47								72	65	74	54	312
3	Lamp Replacements (Hrs.)	2	2	2	4	6	3	5	6	7	1	8	2	48
4	Street Repairs (Hrs.)	94	32	109	111	81	65	95	21	71	24	11	16	730
5	Cable Troubleshooting (Hrs.)													0
6	Bench Repairs (Hrs.)	55						11		1	2			69
7	Signal Programming (Hrs.)	6		1				1	2		2	1	2	15
8	Signal Design/Inspection/Contr. (Hrs.)	53	15	61	57	38	10	12	59	9	12	14	9	349
9	Miscellaneous (Hrs.)	24	27	1	6	5	2		4	4	26	4	1	104
10	L. E. D. Installation (Hrs.)												3	3

No	Signs	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
1	Fabricated	25	80	63	50	15	24	79	9	33	47	64	25	514
2	Repaired	40	18	34	15	20	23	13	8	11	9	6	4	201
3	Installed	14	10	8	5	13	15	16	10	9	4	3	1	108
4	Replaced	16	7	40	7	3	3	8	41	21	46	8	16	216
5	Removed	10	3	14	16	7	8	1	7	7	13	10	2	98
6	Poles Used	12	5	6	3	4	4	8	3	25	7	4	3	84

BUREAU OF BUILDING MAINTENANCE

BRADLEY A. YINGST – DIRECTOR

GENERAL

The Bureau of Building Maintenance consists of a bureau director and eight custodians (three on loan from the incinerator but returned to the incinerator in November 2005). Duties for employees of this bureau are as follows:

- Three custodians servicing the Public Safety Building.
- Three custodians servicing the City Government Building.
- Two custodians working nights and weekend shifts.

Two major duties each day, completed by six persons, are:

- The cleaning of 29 rest rooms.
- The emptying of 406 trash cans.
 1. The 29 rest rooms contain the following:

Toilets	29	Towel Dispensers	29
Toilet Cubicles	49	Paper Holders	49
Urinals	24	Soap Machines	29
Wash Basins	43	Ash Trays	29
Mirrors	43	Ceiling Vents	29

The total floor area to mop is 3,066 square feet, an area 10 feet wide by 306 feet long, or roughly the length of River Alley from PNI to Walnut Street.

All these items are checked, cleaned and serviced once daily.

2. The 406 trashcans can be related to as 30 trips to the trash room. Nineteen of those trips are from a distance of 1/2 block away. Time must also be used to clean up the trash collection and staging areas.

One half hour has been given to clean each rest room. This means there are 14.50 hours per day used to clean rest rooms. This figure is divided by 4 persons for a time of 3.63 hours each.

With a high estimate of 6.50 actual accomplished working hours per person per day, there remains only 2.87 hours per person to empty 406 trashcans. If you multiply 2.87 hours by 4, you get 11.48 hours remaining per day. The 11.48 hours equal 689 minutes. Divide the 689 minutes by 406 trashcans and you get 1.70 minutes per can. That is 1.70

minutes to locate, empty each can, make thirty trips to the trash room and keep it clean at the end of the shift.

ADDITIONAL DAILY DUTIES

- The cleaning of 7 drinking water fountains.
- Dumping and wiping-out an estimated 200 ash trays.
- The cleaning of 4 office suite directories.
- The cleaning of 4 fire hose cabinets in the Public Safety Building.
- The cleaning of 5 glass doors in the Public Safety lobby.
- The cleaning of 2 information windows in the Public Safety lobby.
- The cleaning of 1 glass display case in the Public Safety lobby.
- The dumping and cleaning of 5 ash tray stands in the Public Safety Building.

WEEKLY DUTIES

- Sweep and mop 401 stair treads.
- Sweep an area of 4,742 square feet.
- Sweep and mop an area of 26,205 square feet, or an area equal to 60% of one acre. That is 3,945 feet more than the total space on which the Public Safety Building is constructed.
- Vacuum an area of 76,019 square feet, or an area equal to 1 3/4 acres.
- Clean and polish 22 elevator doors.
- Clean 8 shower stalls.
- Clean one 10-space shower stall and a drying off room.
- Clean a number of lock-up cells as needed.
- Replace 30 to 40 light tubes.
- Deliver and organize an immeasurable (?) amount of boxes.
- Rearrange and organize an immeasurable (?) amount of storage material and furniture.
- Decorate, tear down and organize at least one special event during the summer months.
- Run performance tests on emergency generators (three) each week.

MONTHLY DUTIES

- A floor area of 4,900 square feet is waxed.

Building Maintenance

- A floor area of 41,664 square feet, or 95% of an acre, is swept.
- 157 lockers are dusted and wiped down.
- An estimated 25 ceiling lights are cleaned.

DAILY DUTIES – SECOND SHIFT

- Lock-up both buildings. This task includes 49 doors.
- Dump and clean 14 ash tray stands.
- Clean 10 glass doors.
- Vacuum council chambers and caucus room, a total of 1,716 square feet.
- Dust and polish council desks and tables (10).
- Dust off and check council seating, a total of 94 theater arranged seats.
- Empty the trash in the mayor's suite. (7 cans).
- Clean two rest rooms containing the following:
 - Two toilets
 - Four wash basins
 - Four mirrors
 - One urinal
 - Two toilet cubicles
 - Two ceiling vents
 - Two toilet paper holders
 - Two soap machines
 - Two towel dispensers
 - Mopping two floors equaling 224 square feet

BUREAU OF VEHICLE MANAGEMENT

GEORGE L. SCHWARTZ – DIRECTOR

HISTORICAL INFORMATION

The first known “Vehicle Repair Facility”, for the City, was located in close proximity to the “Farm Show Complex” on North Cameron Street. Housing either three or four mechanics the primary responsibility was to maintain and repair approximately twelve sanitation packers. The “Lead Mechanic’s name was Mr. Cassell.

In the early 1970’s, the now known “Public Works Complex”, was built. The enclosed area, with an address of 1690 South 19th Street, was built to garage equipment for the Sanitation and Incinerator Bureaus but was quickly converted to accommodate the three automotive technicians from the North Cameron Street location. The complex would later be expanded to additionally facilitate the Bureaus’ of City Services, Traffic Engineering, Shade Tree and Water. While some of these Offices and operations have since been relocated elsewhere in the City, or reorganized / consolidated and operated under the name of Bureau of Neighborhood Services, the Vehicle Maintenance Center remains at this location.

The complement of automotive technicians that were relocated to this location would rapidly increase in number. This increase in the number of employees prompted the additional responsibility of maintaining more of the City’s vehicles and equipment. At one time the Bureau’s organization included twenty-three employees, not including a management staff of two. The organization was then comprised of; a body shop with two employees, a refueling site with an employee to dispense fuel and wash vehicles, three custodians to care for the facility / grounds, two parts persons, three administrative / clerical staff and about twelve mechanics to maintain the fleet of unknown size (estimated at two hundred and fifty pieces). The management staff included a Bureau Director, Mr. Eugene Durham, and a Chief of Operations, Mr. Roger Roden. The Bureau was then known as the Bureau of Vehicle Maintenance. The total complement of employees peaked at about twenty-five in mid to late 1970’s.

In 1989, the City’s fleet was comprised of approximately two hundred and seventy seven known pieces of equipment. The Bureau had an employee complement, at that time, of sixteen. The Bureau’s organization included; a body shop with two employees, one parts person, one administrative assistant, one laborer, eleven technicians, and one management staff.

In 2001, the fleet consists of approximately four hundred and sixty pieces of equipment and continues to grow. It was supported with a staff of eleven, which includes one management employee. The Bureau was then divided into three divisions, the Administrative, Procurement and Supply, and Maintenance / Repair Divisions. The Maintenance / Repair Division has three units, the Light, Heavy, and Body Shop Units. In 2006, the fleet has increased in size to 465 units and Bureau has a compliment of ten employees and a management staff of one.

In December of 2002, and by Mayoral Executive Order #5, two major changes in the organization took place. The first, and the one which will impact most on operations, is that total fleet management control was delegated to this Bureau. The second, recognizing the bureau is responsible for more than just maintenance, was the formal name for the bureau was changed from the Bureau of Vehicle Maintenance to The Bureau of Vehicle Management.

BUREAU OF VEHICLE MANAGEMENT

GENERAL

MISSION STATEMENT; To aggressively continue being an asset to the City operations by properly maintaining the City's fleet in the highest state of readiness at the lowest possible cost, and to provide a cost savings City wide Fleet Administration Program.

This annual report is prepared for the purpose of furnishing information and statistics relative to the operations of the Bureau of Vehicle Management for the calendar / fiscal year of 2006.

The Bureau is directly responsible for the management of the City's vehicle and equipment fleet. This includes total fleet management, inclusive of preparing specifications, purchasing, equipment maintenance and repair, and disposal when it is determined that a unit is no longer serviceable. While on the surface this may appear to be a simple task, it is not. The logistics of such an undertaking requires dedicated, highly technical, and knowledgeable individuals able to perform all the related functions in this multi-faceted operation. Keeping current with the ever-changing vehicles, their components together with governmental mandates are some of the several major challenges facing all involved.

The Bureau, itself, is divided into 3 separate divisions. They are the Administrative Division, the Procurement and Supply Division and the Maintenance and Repair Division. The Maintenance and Repair Division, unlike the other 2 divisions, is separated into 3 units. They are; the Light Duty Unit staffed with 7 employees, the Heavy Duty Unit staffed with 1 employee, and the Sheet Metal Unit (body shop) staffed with 2 employees. The Procurement and Supply Unit and the Administrative Divisions are each staffed with 1 employee. As the names for these units imply, each unit is primarily responsible for the repairs to vehicles and related equipment. This however, should not indicate that each operates independent of the others. They are specifically organized to interact with each other and share the total workload, specializing in the type of work as their name implies.

While the Bureau continues to function efficiently, there is an ever-increasing amount of work contracted to outside vendors. At one time, the Bureau performed 95 to 98% of all work in-house. With the ever-aging and ever-increasing size of the fleet and the ever-decreasing size of the support staff, this number has been reduced to 75 to 80%. It has to be understood that at one time, 1988 in fact, the fleet consisted of approximately 275 pieces of equipment and had a complement of 16 union employees. Today the fleet consists of over 465 pieces of equipment and currently has a complement of ten union employees. The budget in 1988 was \$955,128.00, today it is in excess of \$2.6 million dollars.

2006 IN REVIEW

As always, the opening question was: Was the weather kind to the south central Pennsylvania area? The answer, yes. The weather was kind to the area with an early accumulating snowfall and the balance of the season having several storms with only minimal accumulations, and none significant enough to cause any major concern.

The progress made by this Bureau during the calendar year 2006 is briefly reviewed in the following articles.

OPERATIONALS

It may always seem to be the first topic listed, but the credit is always well deserved. That topic is the PACC (PA Capital City Equipment Procurement Contract). As in prior years, the program continues to grow with leaps and bounds, bringing much credit to the City.

The program is a true success, and as of this writing over 2800 separate known transactions have occurred. The purchasing entities include the Commonwealth itself, numerous municipalities within Pennsylvania, and other entities within the State of Maryland, Delaware, Connecticut New York, Virginia and Washington State. At the close of 2005, it is estimated that purchases using this contract have a dollar volume in excess of \$300 million dollars. Interesting enough, the growth of the program in 2004 was five times greater then the number of purchases for the first four years combined. In the calendar year 2004, there were exactly 400 transactions. In 2005, there were a total of 594 transactions, a 49 percent increase from 2004. For 2006 there were a total of 636 transactions, an increase of seven percent from 2005. The latest entry of new purchasing entities purchasing from the program is Washington DC. Correct, now the program is responsible for transactions by the nation's capital, the District of Columbia. It is estimated the program is responsible for a savings, to the participating entities, of 10 to 15%. Quickly calculated at 10 % savings, the program is responsible for the **saving** of taxpayer's funds **in excess of \$50 million dollars**. This is quite a feat for a City the size of Harrisburg. The use of the program has not diminished. In fact, purchases from the program continue to grow at a phenomenal rate.

The Commonwealth performed several audits of the program in the calendar year of 2005. Thus far, a formal interim report has been received which outlines some minor areas the Commonwealth would like to see clarified. Overall however, it is the consensus that the program is very valuable and should continue to assist government in their purchase of various types of equipment.

It should be, again, properly noted and with emphases that the program is widely recognized and respected by the purchasing entities of seven-plus states and major equipment manufacturers themselves. The program was recognized twice, once by the National Association of Fleet Administrators in 2002 when the "Larry Goill" Award was presented and then by the Commonwealth of Pennsylvania itself in April of 2004, when the Honorable Governor Edward Rendell presented the Government Excellence Award for the program and it's innovative concept.

2006 IN REVIEW (continued)

Not bad to say the least: International and Gubernatorial reorganization. The way things look now, there is a possibility of more to come.

During 2006, the program was re-bid. The latest change to the program, other than the minor changes the Commonwealth suggested, was to include additional equipment. The additions included Agriculture and Commercial Mowing Equipment with expansion in the types of Construction Equipment offered. Thus far, all is being well received. It was found very interesting that during the re-bid process several manufacturers reviewed the program in considered to bid the program for direct sales. This issue is also being more closely pursued for adoption for the next contract specification bid since it could possibly result in lower purchasing prices. Another area being considered for inclusion is to include provisions for “light duty” used equipment. This area has to be approached cautiously since it could only involve certain categories.

RECOGNITION

Possibly a bit out of form for this presentation but an issue requiring formal addressing is the fact that in September of 2006, another City employee was nationally recognized. During the American Public Works Association (APWA) 2006 Congress held in Kansas City, Kansas, Mr. James M. Close, the Director of Department of Public Works was recognized as one of the Top Ten Public Works Director of the Year, in the nation, for 2006. There are 67 chapters representing 26,000 members of the APWA in the United States and Canada, plus affiliated relationships with several foreign countries worldwide. Competition for the APWA national awards is an arduous process. The Top Ten Public Works Director award is based on a comprehensive criteria considering all aspects of Public Works, its management and operations which includes Vehicle Management, Traffic Engineering, Water, Waste Water, City Services and Sanitation to name a few. Innovation, planning programs, the use of technology, cost saving programs, employee training, and safety, are a few of the weighted factors in the selection process. For the Director of Public Works of a City the size of Harrisburg to be recognized by his peers at the national level of such a large professional organization brings great credit to Mr. James M. Close, the City, and the Department of Public Works. Well done, Mr. Close!

FLEET MANAGEMENT

Recognizing that fleet operational expenses continue to grow, and that today the City has the largest fleet in its history, the Mayor, by 2002 Executive Order, made a command decision renaming the Bureau to “Vehicle Management” and directing this Bureau to be responsible for monitoring, controlling and otherwise managing the overall activities of the City’s fleet.

This responsibility will require, because of increased budgetary constraints, the placement of more prudent practices for purchasing, maintenance, operations and management of the fleet.

With these major changes, the Bureau will play an intricate role in reviewing the overall operation of the fleet.

2006 IN REVIEW (continued)

This includes but is not limited to operational responsibility, standardization, rotation, life cycle costing, fleet reduction (without compromising agency operations), improved inventory control standards, and the review and coordination of all motorized / non-motorized acquisitions, to name a few.

If, and when, fleet deficiencies are recognized, they will be communicated, together with the corrective action, which is to be implemented by the appropriate management personnel.

It appears that it will all come to pass in during the first half of 2007. Basically, employees of this Bureau will undergo training and will have access via an internet connection to the management program. The program, "Fleet Focus, will provide management the tools necessary to monitor and control the expenses associated with the operations of the fleet and associated activities. This should only be the beginning. With this tool, vehicles, equipment, parts, supplies, and time will be accountable. The tracking of costs to operate a unit by miles, age, or for a specific period will be available. The replacement of the unit(s), when new units are purchased, will be determined by the cost to operate rather than simply replacing the unit having the highest mileage. Repeated repairs will become easy to recognize and appropriate action will be taken. And the list goes on and on and on. More benefits of the automation, as the program is formally put in place, will be outlined in future reports together with the action implemented and any savings sustained.

COST REDUCTION EFFORTS

Continuing to pursue reduced operating costs, the Bureau adopted the several cost saving programs for 2006. The programs adopted are:

The Commonwealth of Pennsylvania administers a procurement program known as COSTARS. This program contracts with numerous vendors to provide commodities and services that, when acquired in bulk, can result in a significant cost savings to participating government entities. In 2006 the Bureau formally enrolled in the COSTARS program.

The first COSTARS program taken advantage of is for the purchase of office supplies. The Bureau now purchases necessary supplies, when not available from the City's supply division, from a local contracted vendor. Discounts for these supplies are many times up to 50 percent off of the normal catalog / advertised price.

The second COSTARS program selected for participation is one for the purchase of vehicle manufacturer's parts and supplies.

With this contract dealerships representative of Ford Motor Company, Chevrolet Division of General Motors and Chrysler Corporation sell "original equipment" vehicular parts and supplies at a substantially discounted price. The program, once specifically designed for use by Commonwealth agencies only, was opened for the first time in 2006 for cooperative purchasing by other governmental entities.

2006 IN REVIEW (continued)

This specific contract however, has items priced in a different manner. Rather than contracts being bid and awarded to vendors quoting the largest discount from the list or retail price, the contracts are awarded based on a fixed profit margin over cost. Ford's profit margin is 9.8%, with Chevrolet and Chrysler products at 13.8%. This Office is very familiar with these programs since they were designed by the management of this Bureau during his tenure with the Commonwealth. Thus, when manufacturer's original equipment parts / supplies are required they will be purchased from one of the existing contracts.

The next cost saving effort deals with the purchase of "after market parts and supplies". When original equipment parts "are not" required it has been and currently is the Bureau's policy to shop price from local vendors. This purchase method must be tempered by the fact that while shopping price was a priority, never would the quality and or safety of any item purchased be compromised. In 2006, a new vendor opened his doors for business. The company offered to supply "after market parts" at a discount equal to and many times less than those prices when purchased from another local vendor. The ability to purchase at lower cost was only highlighted by the vendor providing an improved method of ordering parts. The new automated ordering system involved the vendor cataloging the City's fleet by the "City's Equipment Number". When parts were needed for a specific unit, the unit's equipment number was entered into a computer and all available parts and supplies available from the vendor are listed. The necessary part number is documented and ordered via the computer terminal for a next business day delivery. If the item was needed immediately, a simple telephone call will have the part delivered within a brief period. The vendor providing this service is also, now, contracted with the PA DOT once again resulting in larger bulk purchases and lower prices. In addition, conversations are currently underway with the parts vendor and the providers of the fleet management software with a request that the companies consider a marriage of the two programs. The marriage of the programs would improve the parts / supply order system while maintaining an enhanced inventory control program resulting in an overall lower expense to the City.

The aggressive searching out and locating of such cost saving programs will continue and as found be adopted by this Bureau.

PRODUCTION

The enclosed chart denotes the production, for the Bureau, historically for a nine year period and for the calendar / fiscal year 2006. Production for the latest year is then compared directly against the preceding year. As depicted, the numbers of repairs (repair orders) for 2006 are slightly lower than 2005. As in the past, the decrease is attributed to two reasons. The first is the additional manpower that was detached from the Incinerator had completed their assignment and returned to their origin in very early September of 2004. These employees, while assigned for only a temporary period, had a very positive impact on assisting with the reduction of this Bureau's work and work backlog. Their returning to their original Incinerator assignment had just the opposite effect.

2006 IN REVIEW (continued)

The second reason is the continued aging of the fleet. It has to be understood the increase in number and type (more severe) of repairs, documented on a repair order and the time that is required to complete those repairs is directly proportionate to the age and overall condition of the unit being repaired. This fact alone skews the production numbers documented, which are based solely on the number of repair orders processed. While the number of repairs (counted by the number of work orders issued) has declined, the total number and severity of repairs, documented on each repair order, has increased.

With the onset of an automated program, the documenting of the production will take a different format and better describe the actual work being performed.

As in prior years, the work backlog caused by a reduced workforce can, and will be, dealt with by the adoption of one, or the combination of, any of following four methods: a.) Increase the production abilities of the remaining employees, b.) Increase the number of overtime hours, c.) Increase the amount of work that is contracted to outside vendors, d.) Reduce the size of the fleet. This Bureau will attempt to combine portions of all three areas and maintain the lowest possible expenses.

EMPLOYEE COMPLIMENT

During the last quarter of 2006, the City entered a very austere period. During this period approximately 37 Police and Management employees entered a lay-off period. The lay-off period continued and ultimately those on the furlough were dismissed, never to return.

While the furlough did not affect this Bureau, it will surely strain some of the support services historically offered by the "Downtown" areas of the City. It is anticipated that additional "cut-back" will occur during 2007. These adjustments will be a challenge by all moreover, by the management team remaining. This challenge will be met directly in an effort to sustain operations at nothing less than an acceptable level.

RECYCLING – THE GREEN PROGRAM

The City and particularly this Bureau continues to actively support a recycle "Green" program. The following details existing programs this Bureau has adopted and is participating in to improve the environment.

Over the years the Bureau progressed from; purchasing and using virgin, new engine lubricants, changing the product at prescribed intervals and paying to have the used product hauled away; to changing the lubricant and selling the used product back to recycle vendors; to a program of purchasing and using a "re-refined oil (re-refined oil is used oil that was reclaimed and recycled through a process including the filtering, cleaning and otherwise removing the impurities from the used product) and selling the used product back to a recycle vendor; to using the re-refined product once changed, using the used lubricant as fuel and the burning of it in "waste oil" furnaces, providing heat to the facility.

2006 IN REVIEW (continued)

During 2006 the program continued to evolve. Entering the next level of recycling, the Bureau now purchases semi-synthetic engine oil. Rather than draining and disposing the oil at a prescribed drain interval, each piece of equipment is now brought into the facility at the designated interval, the filter changed and a sample of lubricant is taken. The oil sample is then sent to a laboratory for an analysis to determine its overall condition. A report is then returned to the Bureau with a recommendation of course of action. This action could range anywhere from recalling the unit and completely changing the oil to a report that indicates that no action is necessary.

Using an oil sampling program has an end result which extends the average useful lifetime of the lubricant four fold. The additional benefit to a sampling program is that it provides for a program that forewarns of pending component failure. With proper reaction to oil analysis reports, major internal engine damage can all but be eliminated. In addition, once the engine oil is changed, the used oil continues to be a source of fuel, used in the Bureau's waste oil furnaces and heating the facility.

It should be noted that use of the used product as a fuel has been 100% successful. It is highly recommended that an additional one, and possibly two, furnaces be acquired. These furnaces would be used in, and provide heat for, the Bureau's body shop division.

INCREASED FUEL COSTS

Once perceived as a nuisance expense in any budget has now involved a fleet has now evolved into a major problem. That is, the price of fuel and other products produced from petroleum. In the days of old, fuel would be calculated at hundreds, or sometimes thousands, of dollars. Today, however, the expense is calculated at hundred of thousands, and for many multi-millions, of dollars. The following is an illustration of how fuel prices have changed over the past several years. These numbers are the "actual" cost per gallon that was budgeted and not an average. The actual average far exceeds the budgeted numbers outlined.

<u>Year</u>	<u>Diesel</u>	<u>Gasoline</u>
2006	\$1.76	\$1.72
2005	\$2.13	\$2.04
2004	\$1.61	\$1.45
2003	\$1.07	\$0.93
2002	\$0.95	\$0.91
2001	\$0.81	\$0.72
2000	\$1.03	\$0.96
1999	\$0.66	\$0.64
1998	\$0.54	\$0.49

The numbers equate to a 225% increase in the cost of diesel and a 250% increase in the cost of gasoline for an approximate 8-year span.

2006 IN REVIEW (continued)

The excessive cost of fuel has a devastating effect on the overall City's budget. We, at this Bureau, are taking every step available to insure the units in service are in the most efficient mechanical condition possible. It behooves other employees however, to also take every measure possible to reduce fuel consumption. The steps include ensuring tire pressure is correct, turning the engine off when just sitting for an extended period, restricting air conditioning use, improving driving techniques, maintaining a clean vehicle and insuring the unit is turned-in for service at the prescribed time.

While we cannot stop using fuel, we should take the necessary measures, as a team, to reduce the amounts consumed and reduce the dependence we have on petroleum, and the precious natural resource, oil.

ALTERNATIVE FUELS

A new alternative fuel program was adopted in 2006. Recognizing the lack of stability in the Middle-Eastern nations and how it has a devastating effect on the nation's economy together with a goal of reducing the depleting the world's precious petroleum reserves, the City entered into an alternative, bio-fuel program. Bio-fuel is an agriculture-derived fuel. Commonly known to be processed from soy beans, bio-fuel can come from cooking oils, tree bark and corn, to name a few. The bio-fuel selected was bio-diesel. In late summer, deliveries of B-20, that is a blend of 20 percent bio product and 80 percent diesel, began. While in the beginning difficulty was incurred with algae in the underground storage tanks and some "clouding" because of water, the problem was corrected and the program continued. The dispensing the bio-fuel at a reduced blend rate was selected for the winter season. With the onset of spring however, the program, with a B-10 product, will be reentered.

Also, during the last calendar quarter of 2006, application was made to the Commonwealth of Pennsylvania, Department of Environmental Recourses for a grant. The grant is designed to foster an alternate fuel programs and, if approved, will subsidize any additional expenses incurred over and above a normal diesel fuel program. More information will be provided in the 2007 annual report on the status of the bio-diesel or any other alternate fuel program if adopted and the Commonwealth grant if received.

OBJECTIVES FOR 2007

As in the past objectives are always a part of each annual report. Many times the number of objectives seems to become overwhelming. Thus, a new effort will be placed at identifying, each year, only the three most important. This will permit the Bureau to largely concentrate on the most important rather than listing many and not allowing proper attention to each. The following are the three objectives, listed in order of importance, which will be pursued, or continued to be pursued, in the upcoming calendar year of 2007.

FLEET MANAGEMENT - AUTOMATION

This objective has been in and will remain in every annual report to insure true compliance with the Mayoral Executive Order Number 5, which Fleet Management effort now is in the hands of this Bureau. One of the first objectives will be to compile an outline of what programs can be adopted to reduce the budgetary expenses associated with the operation of the fleet. This effort in its own will be a large undertaking, since any program considered must be able to be implemented Citywide, while not compromising any agencies existing operations. The information realized from the automated "Fleet Management" program will cause this area to be expanded.

FACILITY REORGANIZATION

Several annual reports have made reference to the continued growth of the fleet. Together with the increase in number of vehicles and equipment the parts and supply inventory has also increased. Because there has never been any formal inventory tracking program many times duplicate inventory would be purchased, shelved and forgotten about. Hence, when an item was needed for a repair, and if the prior purchase was overlooked, another, unnecessary item was acquired. Because of this problem, a major reorganization of the Procurement and Supply Division will be completed. Along with the implementation of the above, automated inventory system, improving the inventory accountability, the parts room and three different rooms (warehouses) will be reorganized. This program will result in improved floor plans, and taking into consideration the type, size, and movement of the inventoried item. The reorganization of the floor space has begun and will continue. Furthermore, efforts to reorganize the facility will also include the floor area which was once held captive to the collections of the Master Mechanic of the Bureau of Fire.

VEHICLE MAINTENANCE AND REPAIR OPERATIONS

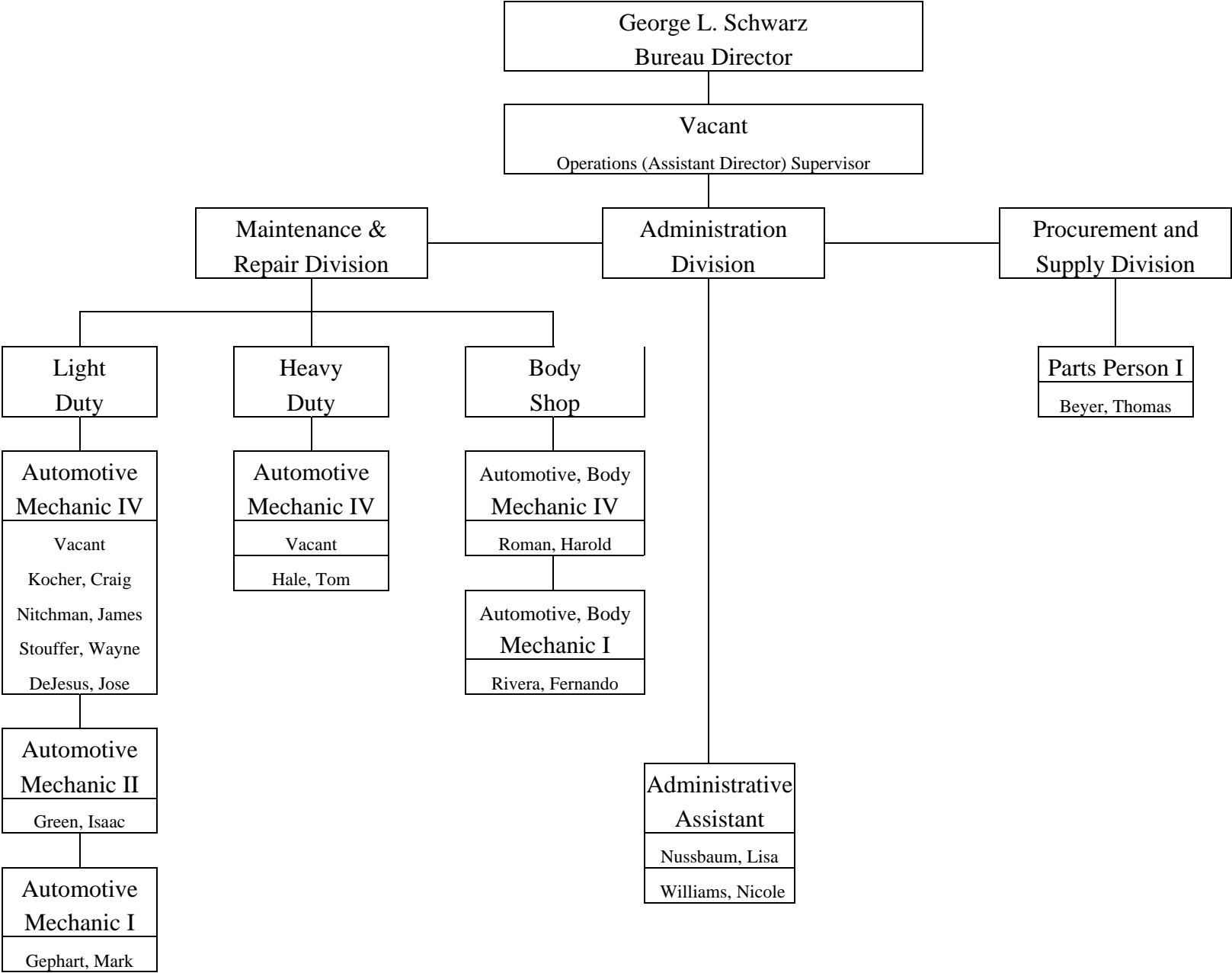
	1998	1999	2000	2001	2002	2003	2004	2005	2006	05 vs. 06
<u>Equipment Repaired (Units)</u>										
Trucks	1450	1483	1430	1386	935	790	925	748	625	-16%
Passenger	1387	1273	1070	960	803	1049	993	891	759	-15%
Heavy Equipment	193	194	179	251	579	600	461	353	311	-12%
Misc. Equipment	138	104	163	151	82	162	72	34	61	+83%
Total Units	3168	3057	2842	2748	2399	2601	2912	2026	1856	-07%
<u>Equipment Preventive Maintenance</u>										
(Not calculated in above repairs)	573	553	437	498	476	439	441	377	377	-08%
<u>Fuels Dispensed</u>										
Gasoline	154,540	146,652	143,571	157,601	189,615	188,626	261,500	268,045	240,987	-10%
Diesel	173,283	183,851	182,211	186,131	289,688	204,388	198,357	238,036	215,424	-10%
Total Gallons	327,823	330,503	325,782	343,732	379,303	393,014	459,857	586,430	456,411	-22%
<u>Invoicing</u>										
Utilities	\$146,856	\$131,289	\$146,223	\$144,227	\$155,719	\$227,556	\$228,204	\$237,309	\$228,881	+04%
General Fund	\$424,690	\$433,415	\$461,913	\$502,425	\$475,900	\$581,074	\$506,769	\$459,260	\$459,260	+07%
Others		\$1,135	\$1,197	\$660	\$1,193	\$2,037	\$941	\$1,033	\$1,819	+76%
Total	\$571,790	\$565,839	\$609,333	\$647,311	\$632,812	\$811,668	\$735,994	\$697,602	\$697,602	+04%

Approximately one hundred and sixty (160) hours of overtime were exhausted for the fiscal year 2006.

The average work order backlog was 28 jobs per month.

BUREAU OF VEHICLE MANAGEMENT
GEORGE L. SCHWARZ, DIRECTOR
2006 EMPLOYEE ROSTER

BEYER, THOMAS	PARTS PERSON I	04/04/02
DEJESUS, JOSE	AUTOMOTIVE MECHANIC IV	07/20/88
GEPHART, MARK	AUTOMOTIVE MECHANIC I	08/03/92
GREEN, ISAAC	AUTOMOTIVE MECHANIC I	08/12/02
HALE, TOM	AUTOMOTIVE MECHANIC IV	06/05/89
KOCHER, CRAIG	AUTOMOTIVE MECHANIC IV	03/03/75
NITCHMAN, JAMES	AUTOMOTIVE MECHANIC IV	04/14/75
NUSSBAUM, LISA	ADMINISTRATIVE ASSISTANT	10/17/05
RIVERA, FRANANDO	AUTOMOTIVE BODY MECHANIC I	05/08/00
ROMAN, HAROLD	AUTOMOTIVE BODY MECHANIC IV	07/06/01
STOUFFER, WAYNE	AUTOMOTIVE MECHANIC IV	08/10/87
WILLIAMS, NICOLE	ADMINISTRATIVE ASSISTANT	10/20/03



2006 BUDGET

PERSONNEL – SERVICES		JOB CLASSIFICATION	BUDGET	ALLOCATION
Salaries – Mgmt.	55,763	Director (VMC)	1	55,763
Salaries – BU	424,116			
Overtime	2,284			
Fringe Benefits	192,217	TOTAL MANAGEMENT	<u>1</u>	<u>55,763</u>
TOTAL	<u>674,380</u>	Automotive Mechanic IV	5	224,420
		Automotive Body Mechanic IV	1	44,754
		Parts Person II	1	39,480
		Automotive Mechanic II	2	79,060
		Automotive Body Mechanic I	1	36,372
Communications	3,500			
Professional Fees	0	Total Bargaining Unit	<u>10</u>	<u>424,116</u>
Utilities	41,300			
Insurance	0			
Rentals	5,500	Overtime		<u>2,284</u>
Maintenance & Repairs	160,650			
Other Services	15,850	FICA		36,887
Supplies Expenses	1,773,650	Healthcare Benefits - Active		136,024
Minor Capital Equipment	<u></u>	Healthcare Benefits - Retired		19,306
	2,000,450	Total Fringe Benefits		<u>192,217</u>
CAPITAL OUTLAY	0			
		TOTAL	<u>11</u>	<u>674,380</u>
TOTAL APPROPRIATION	<u>2,674,830</u>		<u>=====</u>	<u>=====</u>
	<u>=====</u>			

ADVANCED WASTEWATER TREATMENT FACILITY

ROBERT B. WHITE – ACTING SUPERINTENDENT

ACCOMPLISHMENT REPORT

GENERAL

This annual report is prepared for the purpose of furnishing information pertinent to the operation and maintenance of the Harrisburg Advanced Wastewater Treatment Facility (AWTF) during the calendar year 2006. The function of the Harrisburg AWTF is to protect the quality of its receiving waters: namely, the Susquehanna River and the Chesapeake Bay. At the Harrisburg facility, wastewater processing operations include preliminary, primary, and advanced secondary treatment.

Under the direct management of the City of Harrisburg and ownership by The Harrisburg Authority, the treatment facility was properly operated and maintained during 2006. The facility has a permitted capacity of 37.7 MGD while serving an estimated population of 122,000 residents from the City of Harrisburg; the Boroughs of Paxtang, Penbrook, and Steelton; Susquehanna Township; and portions of Lower Paxton and Swatara Townships. Exhibits I through IV have been developed to graphically demonstrate various components needed to achieve this.

Throughout the year, the facility met National Pollutant Discharge Elimination System (NPDES) requirements, with three exceptions. The permit requirements address hydraulic loading and organic discharges established by the United States Environmental Protection Agency and the Pennsylvania Department of Environmental Protection. The resulting overall compliance with the NPDES permit limits was 98.3 percent.

Appended to the end of this report are tabulations based on the statistical information gathered over the year. To graphically demonstrate various treatment characteristics, Figures I through III have been developed.

HISTORY AND DEVELOPMENT

In 1957 the City of Harrisburg created the Harrisburg Sewerage Authority to construct a wastewater conveyance system and primary treatment facilities. The initial project, completed in 1959, included intercepting sewers, two pump stations, force mains and a 26.8 MGD primary wastewater treatment plant. The treatment plant was designed to remove grit and settleable solids, as well as to disinfect treated wastewater prior to discharge to the receiving stream, which is the Susquehanna River. Sludge conditioning was achieved by thickening, anaerobic digestion, elutriation, dewatering and drying or incineration. Sludge disposal techniques included liquid land application, sale of dried sludge to agriculture users and incineration.

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In 1969, the City received an order from the Commonwealth of Pennsylvania to upgrade its level of treatment to comply with new Federal water quality standards. After studies to determine the most cost-effective means of achieving upgraded treatment, the City, in 1972, directed the Harrisburg Sewerage Authority to proceed with the design of a 30.9 MGD high purity oxygen-activated sludge process with chemical treatment for phosphorus removal. Also, sludge conditioning and disposal were redesigned and relocated to the Dewatering and Drying Building. They included chemical condition prior to vacuum filtration with final disposition of the dewatered sludge being transported to the Harrisburg Steam Generating Facility. The co-disposal option eliminated the necessity of fossil fuels for sludge drying and maximized use of existing City facilities.

Financing of the Harrisburg AWTF was made possible through a \$19.6 million construction grant from the United States Environmental Protection Agency and the sale of the Harrisburg Sewerage Authority's Sewer Revenue Bond issue which provided the local financial match. Construction of the project began in 1976 and it was operational in 1979.

During 1984, the City initiated and the Harrisburg Sewerage Authority implemented a co-generation project utilizing the digester's methane gas to generate electricity for sale to the Pennsylvania Power and Light Company. The heat, generated from this process, is reclaimed via a water-cooled engine jacket and is used to heat the primary digester and plant buildings.

Upon evaluation of the existing sludge dewatering process at the Dewatering and Drying Building in 1989, it was determined to be outdated and inefficient. Consequently, the sludge dewatering process was moved to the main plant with the installation of two Belt Filter Presses and the placement of dewatered sludge on a storage pad for temporary holding prior to hauling to a landfill for disposal.

Other improvements which occurred include the relocation of the chlorination system, expansion of the laboratory, and construction of a conference room in 1990. In 1991, one of two air compressors associated with the pure oxygen system was downsized to produce an annual savings of \$97,000.00 in electrical charges. A new 10,500 square foot garage was constructed in 1994 to house conveyance and treatment equipment. During the mid 1990's, the original Detritor System was replaced with a Pista Grit Removal System and a Cyclone Degritter System was installed on the primary sludge process system. As a result of this improvement, the facility received a hydraulic upgrade for daily average flow from 30.9 MGD to 37.7 MGD. The last major upgrade to the facility occurred in 1998 and included the installation of a supervisory control and data acquisition (SCADA) computer system.

PROCESS

The treatment process consists of preliminary, primary, and advanced secondary treatment. The unit processes and equipment can be found in Exhibit I. Preliminary treatment is designed to remove substances that might be harmful to downstream systems or adversely affect the operation of the treatment plant. Methods and equipment employed to accomplish this

AWTF

include mechanical bar screens at the Front Street and Spring Creek Pump Stations, a Pista Grit Removal System for raw wastewater, and a Hydrogritter for sludge at the main facility.

Primary treatment consists of four sedimentation tanks designed to separate the settleable and floatable solids from the wastewater for appropriate handling. Sludge that accumulates in the tanks is pumped to gravity thickeners, and the treated wastewater is pumped to the secondary treatment units.

To further reduce pollutants at the Harrisburg AWTF, advanced secondary treatment is used. The objective of the secondary system, or activated sludge process, is to convert nonsettleable substances, in colloidal or dissolved form, into biological floc. The biological floc is developed in three pure oxygen aeration tanks and is settled out in six secondary clarifier tanks, providing for a high degree of treatment.

Phosphorus removal is accomplished by a chemical process. Coagulants such as ferric chloride or ferrous sulfate combine with phosphate in the wastewater to form a floc that is subsequently removed in the secondary clarifiers.

Biological and chemical flocs produced in secondary treatment are removed from the six secondary clarifiers. Most of the settled floc is pumped to aeration tanks to seed the process. The remainder is transferred to the two gravity thickeners.

The treated wastewater is disinfected by chlorine prior to discharge into the Susquehanna River. Four chlorine contact tanks provide the required contact time for disinfection as required by regulatory agencies. Disinfection removes or inactivates pathogenic organisms.

The primary and secondary sludges are combined and thickened in two gravity thickeners. The sludge is then pumped to two primary digesters. Anaerobic bacteria in the digesters consume organic matter in the sludge and produce gas containing approximately 60 percent methane. The digester gas is used as an energy source for heating the primary digesters and facility buildings, and as a fuel to operate two 400-kilowatt generators. The primary digested sludge is transferred by gravity displacement to two secondary digesters. These units permit additional sludge decomposition, gravity concentration, and storage of methane gas and sludge.

Ultimate sludge disposal is accomplished by dewatering on a belt filter press. The end product, consisting of approximately 18.8 percent solids, is then placed on a sludge holding pad prior to transporting to a landfill.

OPERATION

The AWTF serves an urban area of 43 square miles. The hydraulic load to the plant averaged 22.0 MGD in 2006, a decrease from the 2005 average flow of 23.5 MGD. January was the high flow month with an average of 29.8 MGD, while the lowest flow period occurred in August, with an average of 17.1 MGD.

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The organic load to the plant is the measure of pollutant strength and was recorded in terms of biochemical oxygen demand (BOD), suspended solids (SS), and phosphorus (P). The annual average daily values were 134 mg/l, 124 mg/l, and 3.5 mg/l, respectively. In terms of poundage, the BOD average was 22,683 pounds per day, the SS averaged 22,043 pounds per day, and the P average was 594 pounds per day. Organically, the 2006 values were less than 2005's data. The former yielded 25,479 pounds per day BOD, 24,303 pounds per day SS, and 647 pounds per day P.

The yearly average effluent carbonaceous biochemical oxygen demand (CBOD) per day was 10 mg/l or 1,686 pounds, SS averaged 18 mg/l or 3,243 pounds, and P was 1.5 mg/l or 273 pounds. The destruction of pathogenic organisms, as measured by the fecal coliform analysis, averaged 57/100 ml on the year while using a monthly average of 7,180 pounds of chlorine disinfectant.

Operation removal efficiency varied nominally in 2006. Primary removals averaged 25.5 percent for BOD and 45.7 percent for SS. Compilation of secondary treatment removal (primary inclusive) recorded 92.7 percent for CBOD, 85.2 percent for SS, and 55.2 percent for P.

Sludge handling and processing consists of a variety of operations that incorporate concentration, stabilization, dewatering, and landfilling. The average daily removal of solids during 2006 was 6.6 dry tons per day. The cost per dry ton of solids averaged \$342 per ton and consisted of an average of 18.8 percent solids. The total of wet solids placed in landfills during the year was 13,076 tons.

On February 1, 2003, The Harrisburg Authority was issued a new NPDES permit by the Department of Environmental Protection which contained all regulated effluent parameters. The requirements of this NPDES permit will be in effect until midnight, February 1, 2008.

The values referred to in this section can be found in Exhibits V through X.

MAINTENANCE

The responsibilities of the Maintenance Division include the maintenance of all properties of the AWTF. Mechanical problems that did occur were corrected in a minimal amount of time. Many would-be breakdowns were averted through a preventive maintenance program and a systematic replacement policy for inventory parts. City expenditures for repairs and replacement of treatment equipment totaled \$434,448.12.

Major projects completed by this division in 2006 include:

BELT FILTER PRESS

- Belt Filter Press Number 1:
 - Replaced the lower belt tension roller.

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- Rebuilt the dewatering drum drive motor.
- Belt Filter Press Number 2:
 - Replaced: the lower belt tension cylinder, 3rd lower roller and bearings, upper belt adjusting palm switch, east side pneumatic tension cylinder, bearings on the perforated roller, chains and sprockets on the dewatering drums, pneumatic control valve for the upper belt steering, and four spiral rolls.
 - Rebuilt the main drive gearbox.
 - Repaired the main drive chain, sprocket, and oiler.
- Replaced the drive chain and straight idler roller on the bottom of the horizontal conveyor.

BOILER BUILDING

- Excavated and repaired the leaks in the underground high pressure gas line for the Boiler Building and Co-generation Building.
- Excavated and repaired the four-inch hot water heating lines between the Boiler Building and the Primary Digester Control House.
- Replaced the main gas control valve on the Number 2 Boiler.

CHEMICAL STORAGE BUILDING

- Replaced two fan motors and a hot water circulating pump for the unit heaters.

CHLORINE BUILDING

- Rebuilt the vacuum-check regulators for the Chlorinators
- Replaced the MSA Chlorine Detector.

COMPRESSOR BUILDING

- Cleaned and lubricated the valve unloaders on the Number 1 Ingersoll Rand Gas Compressor.
- Replaced the coolant lines on both Ingersoll Rand Gas Compressors.
- Rebuilt the valves, replaced the piston rings, and valve unloaders on the Number 2 Ingersoll Rand Gas Compressor.

CONTROL BUILDING

- Replaced the hose two times each in the Number 1 and 2 Watson-Marlow Sludge Pumps for the Belt Filter Presses.

-

DEGRITTER BUILDING

- Replaced the apex valve and elbow on the Hydrogritter.

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FINAL SETTLING TANKS

- Final Settling Tanks Pipe Gallery:
 - Replaced the sump pump.
 - Replaced the seir bath coupling on the Number 1 Waste Pump.
 - Rebuilt the pump assembly for the Number 1 & Number 2 Waste Pumps.
- Rebuilt the main collector drive for Final Settling Tank Number 1.
- Repaired the corner sweeps and grease lines in Final Settling Tanks Number 1 and 4.
- Repaired the rake arm assembly and replaced the cables and tires in Final Settling Tank Number 4.
- Replaced the secondary effluent sampler.

FRONT STREET PUMP STATION

- Rag Removal System:
 - Replaced the hydraulic cabinet, hydraulic ram cylinder, and replaced/welded two feet of ten-inch pipe on the compactor.
- Repaired the hydraulic control valve for Sewage Pump Number 2.
- Replaced the domestic hot water coil and chimney pipe on the boiler.

GARAGE

- Replaced the pressure switch and pump seals on the high pressure washer in the Heavy Equipment Garage.
- Replaced the gas line for the five heaters.

GREASE PIT

- Replaced the hose and lubricating fluid in the 3-inch peristaltic hose pump in the Grease Pit at the Chlorine Contact Tanks.

GRIT REMOVAL GARAGE

- Replaced twelve feet of six-inch PVC drain pipe.

OXYGENATION GENERATION EQUIPMENT

- Performed the annual Unox turnaround preventive maintenance and instrument calibrations.
- Replaced the liquid level control transmitter for the main condenser.
- Replaced the cooling tower.
- Replaced the motor on the Rotoflow (oil pump system).

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PRIMARY DIGESTER CONTROL HOUSE

- Replaced the sludge tubes in the Number 2 Heat Exchanger.
- Replaced the plug assemblies in two 8-inch valves for the sludge transfer pump.
- Rebuilt the bearing assembly for Digested Sludge Pump Number 2.
- Replaced the mechanical seal in the Number 6 Hot Water Recirculation Pump.

PRIMARY SETTLING TANKS

- Rebuilt the sludge valve operator on Primary Settling Tank Number 3.
- Replaced twenty-two attachment links, one flight, and repaired the shear pin assembly on the influent basin of Primary Settling Tank Number 4.
- Rebuilt the main flight drive assembly on Primary Settling Tank Number 4.

RETURN SLUDGE PUMP STATION

- Rebuilt the pump bearing assembly for the Number 2 Return Sludge Pump.
- Rebuild the pump assembly for Return Sludge Pump Number 4.
- Replaced the brushes and repaired the slip rings on the motor for the Number 4 Sewage Pump in the Settled Sewage Pump Station.

SCALE

- Replaced the conduit and wiring for the scale at the Sludge Pad.

SETTLED SEWAGE PUMP STATION

- Rebuilt the bearing assembly for Effluent Pump Number 2.

SPRING CREEK PUMP STATION

- Replaced the chain, sprockets, head shaft, and rakes on the bar screen.
- Replaced the main circuit board in the Variable Frequency Drive for the Number 3 Sewage Pump.
- Replaced the MSA Gas Detection System.

THICKENED SLUDGE PUMP STATION

- Replaced the center column in Sludge Thickener Number 1.
- Repaired a 10-inch pipe behind the Thickeners that supplies effluent water to the Harrisburg Steam Generating Facility.
- Rebuilt Scum Pump Number 2.
- Replaced four pole light fixtures on the cat walks.

FIELD MAINTENANCE

The Field Maintenance Division is responsible for the integrity of the conveyance system and the minimization of combined sewer overflows. The division also has the added responsibilities of pump station routine maintenance and debris clearance from waterways.

Projects completed by this division in 2006 included:

- Flushed the drain lines for the Chemical Storage Building, the line from the Primary Settling Tanks to Grease Pit Number 1, the drain at the southwest corner of the Grit Lagoon, the line from the Grease Pit Number 1 to the Chlorine Contact Tanks, the scum line for Final Settling Tank Number 6, the drain line and cleaned the catch basin in the garage of the Degritter Building, and installed a 10-inch x 7-foot PVC pipe in the broken sewer line at CSO Chamber Number 008.
- Vactored the grinder pump sump pit at the City Island Village, the Sludge Thickener Tank Number 1, the sump pump pit in the Pista Grit Garage, the grease pit at the Chlorine Contact Tanks, the ventilation shaft for power Vent Number 37 in the Pipe Tunnel, the scum pits for Thickener Number 1 and 2, and the floor drain trough in the Degritter Building Garage.
- Changed the grease fittings as needed and lubricated all equipment on the Regulating and Flood Chambers.
- Cleaned and washed down all twelve siphon basins six times each
- Inspected five blowout chambers with no maintenance or painting required.
- Inspected the Spring Creek, Paxton Creek, Asylum Run, Hemlock Street, and Paxton Creek Relief Interceptors. The inspections were performed twice to determine the condition of the interceptors.
- Installed nine new CSO Advisory signs in the Riverfront Park (eight) and City Island (one).
- Removed 36 tons of debris from the Grit Lagoon.
- Removed trees and debris from various locations along Paxton Creek and Spring Creek on an as needed basis.
- Repaired the force main from the Front Street Pump Station to the Harrisburg Advanced Wastewater Treatment Plant.
- Updated the CSO reports for the current year.
- Washed the four large radiators for the engines on the roof of the Co-generation Building.
- Washed down 58 Regulating Chambers and 46 Flood Chambers and lubricated the gates.
- Washed down 174 manholes over the interceptors.

BUDGET

The budget, as prepared by management, is intended to control expenditures while insuring efficient facility operations and to balance receipts and revenues collected during the

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budget year. The treatment facility had an operating expense of \$10,828,349.22 and a total annual cost of \$13,151,200.00, debt service cost inclusive. The revenues derived during the budget year were \$13,122,027.65. Monies of the Sewer Revenue Trust Fund were used to supplement the shortfall in revenue. Refer to Exhibit XI for additional information on the 2006 expense and revenue budgets.

LABORATORY

The laboratory is a subdivision of the Operations division, providing technical data and support for the operation of the wastewater treatment facility. Daily analysis for all permitted parameters was performed on the influent and effluent, as well as intermediary flows. Daily testing also included the analysis of processed sludges and by-products. The laboratory staff collected and analyzed samples for the industrial user monitoring program and analyzed the samples required for the continuation of the contract waste hauling program.

In 2006 the laboratory analyzed thirty five permit scans, seventy-seven surveillance scans, sixty two industrial monitoring surveys, and six hundred twenty-five routine hauler analyses with an average turnaround time of less than twenty-four days. Sampling and analysis of Paxton Creek and the Susquehanna River was performed frequently at eleven designated sampling sites to continue monitoring the baseline characteristics of these waterways. Testing required for the contract waste hauler and industrial monitoring programs generated \$41,302.25 in laboratory revenue.

Throughout this time, the laboratory maintained its program for annual US EPA Priority Pollutant monitoring on influent, effluent, and sludge cake. To fulfill landfill sludge disposal requirements, annual PA DEP Form 43 analyses were performed on sludge cake, and all necessary records were maintained. After securing a general permit for beneficial reutilization of biosolids, semi-monthly sampling commenced to test for pathogen reduction, vector attraction reduction, macronutrients and other pollutants not encompassed by analysis for other reasons. In addition to the daily routine testing, metals were analyzed quarterly on influent, effluent and sludge cake, and other process waters, sludges and by-products. Local Limit parameters were performed quarterly as mandated by the permit. The frequency of analyses for total nitrogen was increased from quarterly to weekly in anticipation of more stringent regulatory requirements to meet the terms of Pennsylvania's Chesapeake Bay Nutrient Reduction Strategy.

The increased frequency of some testing resulted in decreased testing of other analytes used for operational control. After evaluation of historical data and trends, it was determined that certain analyses could be eliminated from the daily testing regimen and analyzed weekly with no adverse effects on the operation of the facility. Weekend laboratory testing was reduced further, and samples were preserved for analysis the following week. This decreased scheduled overtime by fifty percent. Additionally, on weekends or holidays when the laboratory could not be staffed due to a reduction in the employee compliment, outsourcing was explored as a method to meet permit requirements for daily testing, as well as reduce overtime costs.

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Calendar year 2006 again saw quality assurance as a top priority with an objective to improve the accuracy and precision of the data generated. The laboratory obtained PADEP interim laboratory accreditation in accordance with 25 PA Code, Chapter 252 regulations. This mandated the generation of a Quality Manual, as well as additional performance testing measures. A Proficiency Environmental Testing Program offered by Analytical Products Group, Inc. (APG) provided the laboratory with semi-annual quality assurance samples and statistical review of results. Exhibit XII details the performance of the laboratory during its 2006 participation in this program. In addition to the APG testing, an internal quality assurance program was continued. This included analysis of blank, duplicate and spiked samples. Also, US EPA certified samples of known values were analyzed on a regular basis as a verification of internally prepared standards. If the results of any quality assurance testing did not fall within the laboratory's control limits, the entire analysis was repeated. Quality assurance records were maintained to summarize results of all calibrations testing and instrument performance. This simplifies a method for technicians, supervisors and inspecting agencies to trace progress.

In the 2006 EPA-DMR Quality Assurance Evaluation, the standard measure of a testing laboratory's performance, the laboratory analyzed all permitted and non-permitted parameters within US EPA acceptance limits. Exhibit XIII highlights the laboratory's evaluation received by US EPA.

INDUSTRIAL WASTE PRETREATMENT PROGRAM

The function of the EPA Industrial Waste Pretreatment Program is to ensure that industrial users (IUs) comply with applicable federal, state, and local pretreatment program effluent discharge limitations and regulations. Industrial user compliance eliminates interference or possible damage to the conveyance and treatment system, untreated waste from passing through the AWTF to the receiving stream, the contamination of sludge which limits disposal and reuse options, and exposure of personnel to chemical, explosion, or fire hazards.

During the year, no additional significant industrial users⁽¹⁾ were permitted. The total number of permitted industrial users in 2006 was ten. Ending 2006, the total number of permitted industrial facilities remained at ten. Of the ten permitted industrial users, three are classified as categorical and seven as noncategorical industrial users.

No compliance schedules were issued during 2006 and the number of permitted industrial users on a formal compliance schedule is zero.

(1) Significant industrial user as defined by Title Nine, Part Five, Section 9-501.1 of the City's Codified Ordinances means all categorical industrial users or any noncategorical industrial users that:

- A). Have a discharge flow of 25,000 gallons per day or more per average workday of process wastewater; or
- B). Have an average process flow which makes up five percent or more of the average dry weather hydraulic or organic capacity of the treatment plant; or
- C). Have a reasonable potential in the opinion of the Control or Approval Authority to adversely affect the treatment plant through inhibition, pass through of pollutants, sludge contamination, or endangerment of AWTF workers, or to violate any pretreatment standard or requirement.

Inspection and sampling activities performed by the City during the year included facility inspections, self monitoring inspections, and compliance sampling. In 2006, ten facility inspections and eight self monitoring inspections were performed at ten industrial facilities. Compliance sampling schedules remained at twice annually for three consecutive days with each day providing a separate sample. Additional monitoring is performed when necessary. The total number of significant industrial users sampled for compliance monitoring was ten and encompassed fifty-nine sampling visits. Of the four significant industrial users not sampled through three consecutive days, three are landfills with a uniform and seasonal discharge.

Self monitoring sampling and reporting activities for significant industrial users remained at quarterly for a conventional pollutant discharger and monthly for a metal and organic priority pollutant discharger. The total number of significant industrial users required to submit a self monitoring report is nine and the total number of self monitoring sampling events was one hundred. Of the one significant industrial user not sampling, it is a landfill where the City opted to perform quarterly compliance sampling. In this instance, self monitoring and reporting is not required.

During the 2006 calendar year, seven violation notices were issued. Five letters of violation were issued for noncompliance with effluent discharge limits. Where noncompliance persisted or an industry did not return to compliance within a satisfactory time frame, significant noncompliance enforcement action is taken. One Notice of violation was issued for a significant noncompliance reporting violation where self monitoring was not performed in the specified time frame and one notice of violation was issued for lead, mercury, and zinc technical review criteria violations. In these instances, public notification is required.

For additional details on industrial users' performance, please refer to the exhibits listed below:

- Exhibit XIV - Pretreatment Performance Summary
- Exhibit XV - Regulated Industrial Users 2006
- Exhibit XVI - Enforcement Actions 2006
- Exhibit XVII - Compliance Sampling/Inspection Schedule 2007
- Exhibit XVIII - Annual Newspaper Publication of 2006 Significant Noncompliance Violators

PRETREATMENT PROGRAM DEVELOPMENTS

During the 2006 calendar year, the AWTF did not experience an upset or permit violation attributed to the indirect discharge of industrial waste. NPDES permit violation(s) caused by something other than an industrial discharge are as follows: Ammonia limit exceedances were caused by lower than normal flows; and, a monthly fecal coliform limit exceedance of 1,000 colonies in more than ten (10%) percent of the samples was due to high flow caused by flood conditions in late June 2006. In order to monitor toxic and incompatible pollutants, various analyses were performed on the plant's influent, effluent, and sludge. The

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results of this activity are detailed in Exhibit XIX. Influent, effluent, and sludge average metals concentrations for current and past years are graphically illustrated in Figures I, II, and III.

Interpretation of influent metals concentration trends contained on Figure I show a slight increase in lead concentrations in 2006. The copper and zinc concentration trend lines appear to have leveled off after increasing in 2005. The cadmium, chromium, and lead concentration trend lines remained the same in recent years. Arsenic, cyanide, and mercury concentrations show no appreciable amounts detected since 2002.

Interpretation of effluent metals concentration trends contained on Figure II show a slight decrease in cadmium, copper and zinc concentrations in 2006. Arsenic, chromium, cyanide, lead, mercury, and nickel concentrations show no appreciable amounts detected in 2006.

Interpretation of filter cake or biosolids metals concentration trends contained on Figure III show a slight increase in lead and zinc concentrations in 2006. The high level of zinc is attributed to the use of a zinc based corrosion inhibitor in the City's water supply. Copper, chromium and nickel concentrations show no upward or downward trend in recent years. Arsenic, cadmium, cyanide, and mercury concentrations show no appreciable amounts detected in 2006.

Local limits were approved on September 30, 1988, by the US EPA and adopted by the City of Harrisburg on October 28, 1988. The local discharge limitations were developed with the assistance of the US EPA computer program PRELIM and are based on the allowable headworks loading method and a safety factor of twenty-five percent. Allocation of the daily maximum allowable industrial loadings of the pollutants was achieved by the uniform concentration technique based on total industrial flow.

A toxics reduction evaluation (TRE) was completed on October 9, 1991, as a part of Harrisburg's NPDES permit renewal process to verify the presence or absence of toxic pollutants in the discharge. As a result of the TRE, a new zinc local limit was adopted by the City of Harrisburg on June 24, 1992, and approved by the US EPA on May 19, 1993. The zinc local discharge limitation was developed with the assistance of the US EPA computer program PRELIM and is based on the allowable headworks loading method and a safety factor of twenty-five percent. Allocation of the daily maximum allowable industrial loadings of the pollutants was achieved by the uniform concentration technique based on total industrial flow.

In addition to the development of the daily maximum loadings, instantaneous maximum concentrations in grab samples have also been calculated. The instantaneous maximum values were determined by multiplying the daily maximum concentration, where applicable, by a factor of two. A multiplier of two was chosen to correspond to the same multiplier used by the Commonwealth of Pennsylvania's Department of Environmental Protection in developing the instantaneous maximum values in Harrisburg's NPDES permit.

Industrial Waste Pretreatment Program changes that occurred in 2006 are as follows: receipt of an updated baseline monitoring report and industrial wastewater discharge application, and re-issued a five-year industrial user permit to the Electronic Service and Design Corporation;

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receipt of a 90-day final compliance report from the Electronic Service and Design Corporation and the Harrisburg Materials, Energy, Recycling and Recovery Facility; upon receipt of a baseline monitoring report from the Pepsi Bottling Group located at 941 Dana Drive, Lower Paxton Township, PA, performed an industrial waste survey inspection and issued a non-regulated letter to the company; inspected Tyco Electronics Corporation's closed loop "metal blackening process" at 100 AMP Drive, Lower Paxton Township, PA and discussed the implications of proposed changes to the process that pertain to the 40 CFR, 433 "Metal Finishing" regulations; submitted proposed Industrial Waste Pretreatment Program updates to the US EPA that pertained to the "Pretreatment Streamlining Regulations"; attended National Incident Management System (NIMS) training.

The last pretreatment audit was conducted on November 2 and 3, 2005 by US EPA representative Stephen G. Copeland. No deficiencies were found in the pretreatment legal authority, application of standards, control mechanisms, compliance monitoring, enforcement, data management and public participation, or resources. The City was noted to be operating a fully successful pretreatment program. Several program changes are anticipated as a result of the "Pretreatment Streamlining Regulations" promulgated on October 17, 2005. Program changes, where applicable, will be submitted to the US EPA for approval.

CONTRACT WASTE HAULING PROGRAM

The AWTF continues to be well known in Central Pennsylvania as a sludge disposal center for process and septic waste. The objectives of the Contract Waste Hauling Program (CWHP) are to 1) provide an alternate sludge disposal method to regional POTW's, food processing companies, and septic waste haulers; 2) collect permit, disposal, and laboratory fees in excess of expenses; and 3) increase digester gas production by decomposition of the waste by-products. Correspondingly, with increased gas production, there is an increase in cogeneration electrical sales.

A computer program is utilized by AWTF personnel to facilitate the administration of the CWHP. The program maintains customer information, controls daily transactions, produces invoices, and keeps complete accounting records for each customer. Computerization has reduced manual tasks, minimized errors, and structured CWHP activities.

All waste accepted at Harrisburg must meet certain criteria outlined in the Contract Waste Hauling Program Manual to insure the protection of AWTF personnel, structures, equipment, processes, and sludge disposal options. To insure that all waste complies with AWTF requirements, routine monitoring is performed by the facility's Laboratory.

Monitoring is accomplished through either a complete scan upon permit application submittal, surveillance scans, or routine sampling of waste throughout the course of the year. In 2006, thirty-five permit scans, seventy-seven surveillance scans, and six hundred twenty-five routine samplings were performed.

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Disposal permits are issued for a one-year period, and each hauler is categorized as handling either process or septic waste. In 2006, thirty-five process and two septic disposal permits were issued; accordingly, \$1,850.00 in permit application fees were collected. Disposal activities accounted for \$322,201.35 in revenue, while an additional \$9,297.00 was attributable to the sale of electricity based on an increase in methane gas production from the digestion of Contract Waste Hauling sludge. Additional details may be found on Exhibit XX and XXI.

COGENERATION PROGRAM

The cogeneration process utilizes methane gas produced in the anaerobic digestion process to fuel two 400-kilowatt generators. In turn, the generators produce electricity and heat. Electricity is sold to the Pennsylvania Power Light Electric Utilities at a rate of \$0.06 per kilowatt-hour. Waste heat from the generators is used for space heating at the facility and for heating the Primary Digesters.

The cogeneration system utilizes a six-cylinder internal combustion engine and uses methane gas produced in the digesters as a fuel. Connected to the engine is a 400-kilowatt electrical generator. Heat is recovered from the engine's cooling system.

During 2006, the cogeneration facility operated 61 percent of the time. The average monthly kWh production rate was 178,877, with a yearly total production of 2,146,520 kWh. The average monthly revenue collected was \$10,733, with a yearly total of \$128,791.20. The total revenue collected was more than the 2006 budgeted amount. The revenue increase was attributable to an increase in gas due to the increase in sludge from the Contract Waste Hauling Program. Refer to Exhibit XXII for complete details.

LOSS CONTROL PROGRAM

The Loss Control Program was established in 1985 with the objective of providing a work-place environment that precludes injury or illness to employees or harm to the community.

Specific parameters are 1) an executive representative responsible for activation and coordination of loss control activities; 2) a Safety Committee comprised of various subcommittees and headed by the Safety Director; 3) accident investigation and maintenance of records; 4) training and educational development to recognize hazards; and 5) control of physical, mechanical, and operational hazards.

Under the direction of the Training and Educational Committee, a video library was established. The library consists of a television, VCR equipment, and videotapes ranging from Eye Safety to Confined Space Safety. Each quarter, the Safety Director selects a tape from the library which is played and viewed by all attending the quarterly Safety Meeting. The present video library has grown to fifty-two safety topics and seventeen training programs. The training tapes have proven valuable as a reliable source of important information.

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Monthly handouts include "Safety Now" and "Staying Safe". These handouts continue to provide management staff with information relative to safety management and awareness.

In order to reduce health-associated costs through prevention, an on-site physical fitness room was maintained and offers employees a place to exercise and work out using various pieces of equipment. Providing employees with health-associated programs can provide a positive, healthier environment and encourage healthier habits.

CAPITAL PROJECTS

The Harrisburg Authority issued Sewer Revenue Bonds, Series A of 1988, in the principal amount of \$12,700,000.

The following summarizes the improvements made in 2006 to the Sewage Conveyance and Treatment System from the proceeds of the 1988 Series A Bonds. The various projects were designed to address sludge processing system upgrades, and increased hydraulic capacity.

- Digester Number 1 rehabilitation of seal and cleaning project.
- Thickener Number 1 repairs and rebuilding of center column.

ADVANCED WASTEWATER TREATMENT FACILITY

GOALS AND OBJECTIVES

2007

OPERATION

- Modify the configuration of the Grit Removal System. These changes should improve the overall operating efficiency.
- Complete Primary Digester Number 2 restoration project.
- Convert all documents, exhibits and figures in formats no longer supported by Information Technology into Microsoft Word and Excel.

MAINTENANCE

- Repair the conditioning tank drive on Belt Filter Press Number 1.
- Repair the corner sweeps and grease lines in Final Settling Tank Number 2.
- Replace the sludge tubes in the Number 3 Heat Exchanger at the Primary Digester Control House.

LABORATORY

- Obtain Environmental Laboratory Accreditation in accordance with PA Department of Environmental Protection regulations, 25 PA Coded Chapter 252.
- Update and revise the Laboratory Standard Operating Procedures manual with more detail and graphics.

PRETREATMENT

- Reissue thirty-seven (37) Contract Waste Hauler permits.
- Revise the Industrial Waste Pretreatment Program to implement provisions of the “Pretreatment Streamlining Regulations” promulgated on October 17, 2005.

BUREAU OF WATER

CHAD BINGAMAN - DIRECTOR

GENERAL

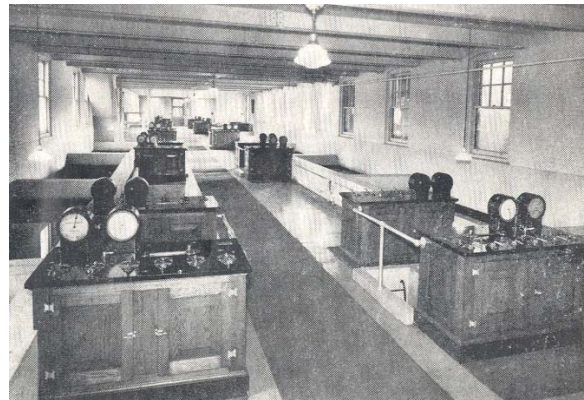
The purpose of this report is to furnish an overview of the operation and maintenance of the Harrisburg Water System during calendar year 2006. The function of this system is to provide, on demand, sufficient potable water to a service area, which includes the City of Harrisburg, portions of the Borough of Penbrook, Susquehanna, Swatara and Lower Paxton Townships.

During calendar year 2006, the water system provided daily service that met or exceeded the requirements of the Federal Safe Drinking Water Act to approximately 20,925 service accounts or an estimated population of 66,000.

HISTORY AND DEVELOPMENT

The origin of the present water-works dates back to 1839, when the Commonwealth granted Harrisburg the authority to take water from the Susquehanna River for supplying its 20,000 residents. By 1843, the original water house was completed along the river near Front and State Streets. A reservoir in the vicinity of Sixth and North Streets was utilized, and a pipeline distribution system gradually developed in the central part of the town. Direct pumping was used for many years thereafter, without the use of filtering methods or chemical controls.

In 1860, Harrisburg was incorporated as a Third Class City, and rapid expansion into the Hill and Uptown districts required larger facilities. An open reservoir was completed in 1873, in Reservoir Park, which provided a gravity fed system by utilizing the high elevation of the park. The original Pump Station was built in 1874 at Front and North Streets for the purpose of mechanically pumping water into the new reservoir. By 1903, the Pumping Station had to be re-equipped with new steam boilers, engines, and pumps, capable of meeting the demands of more than 50,000 residents. A Filtration Plant was constructed on Hargest Island, now known as City Island, and placed into operation in 1905, which provided a filtering system with chemical treatment before the water was pumped into the reservoir.



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In 1924, a number of improvements were completed for the extension and enlargement of the water system at a cost of \$1,600,000. The capacity of the Filter Plant was increased to twice its original size; two turbine pumping units and boiler equipment were installed at the Pump Station; a new 36" force main was laid along North Street from the Pumping Station to Sixth Street and continued to Fifteenth and State Streets; a new 28,000,000 gallon capacity reservoir, completely covered with reinforced concrete, earth, and grass, was constructed in Reservoir Park. This third and largest reservoir was required to supply areas expanding into more distant and higher elevated sections in the Hill district of the City.

In 1936, Harrisburg survived one of the most devastating floods in its history. The Susquehanna River reached more than 32 feet, inundated City Island, and the southern section of the City. The entire water system was out of service for a week and emergency measures were required to supply the residents with limited water brought in by tank trucks.

Shortly thereafter, the development of a new mountain supply in Rush Township along Clark Creek, about 20 miles northeast of the City, was undertaken by City Council, with the vital assistance of federal and state governments. The William T. DeHart Dam was completed on July 1, 1940 and impounded water flowing from Clark Creek and 23 smaller tributaries, producing a body of water with a capacity of 5,260,000,000 gallons that extended four and a half miles upstream of the dam. The reservoir collected water from a 21.62 square mile drainage area consisting of mostly forestland between the ridges of Peter's and Stony Mountains. Raw-treated mountain water was first delivered to the City during the latter part of the same year. This enormous undertaking was one of the largest and most successful projects during this era of the City's water system. The cost was more than four million dollars, but not only gave the City's residents a natural supply of fresh water, but also prevented any possible ravage to the system from floods.



Until 1948, it was advisable to augment the mountain supply with river water through the old system because the Clark Valley supply was not entirely of proper quality. On January 23, 1948, the old system was discontinued entirely; the Pump Station and Filter Plant were placed on a standby basis, but were maintained operable in the event of emergency.

In 1954 an additional 4 feet was added to the DeHart spillway wall increasing its storage capacity to six billion gallons. The DeHart Reservoir currently has an overflow elevation of 644 feet and an approximate dependable yield of 10.5 million gallons per day.

WATER

From 1948, the City Island Filtration Plant functioned as a reserve source of water for the City. The facility suffered considerable damage during the flood of 1972, and all filtration operations ceased. It stood vacant until 1987, when for safety reasons it was razed.

During 1987 and 1988, a hypalon lining was installed covering the 20 million gallon finished water reservoir.

In 1990 the sale and transfer of ownership of the water system to The Harrisburg Authority with the City remaining as the managing agent took place. Ground breaking for the Dr. Robert E. Young Water Services Center and River Front Pump Station took place in October of that same year. These projects were completed on July 19, 1994 when the Dr. Robert E. Young Water Services Center was placed in operation. This undertaking was the largest and most successful project of this modern era of the water system. At a cost of more than twenty million dollars it provides the consumers a state-of-the-art water treatment facility and a back-up water source in the Susquehanna River in case of severe drought or other emergencies.



The DeHart Reservoir's Control Building provides flow metering and the capability of adding chlorine, soda ash, and potassium permanganate as required to the raw water prior to its conveyance by gravity through a 42-inch diameter transmission main to the Dr. Robert E. Young Water Services Center in Susquehanna Township.

The Susquehanna River is the water system's secondary water supply. The system's river intake consists of a screened intake structure and a 36-inch diameter pipe. Raw water flows by gravity through the river intake structure to the Susquehanna River Pump Station's intake well where it is then pumped, using three 400 HP vertical turbine pumps rated at 7,000-GPM each, to the Dr. Robert E. Young Water Services Center. The capability exists to add potassium permanganate to the raw water prior to treatment, if required.

The transmission system includes 20 miles of 42-inch diameter steel-reinforced concrete pipe, which conveys water by gravity from the DeHart Reservoir in Clark Valley to the City of Harrisburg. The 42-inch diameter transmission main reduces to a 24-inch diameter pre-stressed concrete cylinder pipe at Division and 7th Streets before it reaches the influent of the Dr. Robert E. Young Water Services Center.

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The Dr. Robert E. Young Water Services Center has two parallel treatment process trains with a design capacity of 20 million gallons per day (MGD). The process trains include two raw water flow meters, four three-stage paddle wheel flocculators, four rectangular clarifiers, eight multimedia gravity filters with an air scour backwash system, two 9,400 GPM backwash pumps, and two finished water flow meters. The Dr. Robert E. Young Water Services Center's treatment capabilities include the chemical addition of carbon, alum, soda ash, phosphate, hydrated lime, caustic soda, ammonia, zinc orthophosphate, and sodium silicofluoride. Disinfection is achieved with chlorine and sodium chlorite addition. Four finished water pumps at the Dr. Robert E. Young Water Services Center are used to transfer finished water to the Upper and Lower Reservoirs located at Reservoir Park for eventual distribution throughout the water system.

The water system uses two reservoirs to store finished water for distribution throughout its service area. The reservoirs are located at Reservoir Park and serve two different pressure zones. In 2000 the Lower Reservoir was taken out-of-service due to structural failure on the west wall. A project commenced in 2001 to replace the old reservoir with two 6,000,000-gallon tanks. The new Lower Reservoir tanks were placed in service on April 1st of 2002 and serve consumers who are located west of the vicinity of 18th Street within the City of Harrisburg.

The Upper Reservoir serves the water system's high-pressure zone and is a reinforced concrete underground reservoir. The basin has a storage capacity of 28 million-gallons. The Upper Reservoir supplies water to consumers located east of the vicinity of 18th Street within the City of Harrisburg and in portions of the Borough of Penbrook, Susquehanna, Swatara, and Lower Paxton Townships.

In June of 2002, an energy conservation project was completed with the installation of an in-line hydro-turbine generator. The generator produces electricity utilizing the water flow from the DeHart reservoir, allowing for a reduction in the Dr. Robert E. Young Water Services Center electrical dependency. (Refer to Exhibit G for additional details)

The water system's distribution network includes more than 250 miles of cast-iron, ductile iron, and prestressed concrete cylinder pipe in various sizes from 4 to 42 inches in diameter. There are approximately 1,690 fire hydrants and 3,540 valves in operation within the system.

There are a total of five (5) interconnects between the Harrisburg Water System and the water distribution system owned by United Water Inc. which are used as emergency sources of water. One exists at the intersection of Hoffman and Vaughn Streets in the City of Harrisburg and consists of an eight-inch diameter pipe connection with a water meter and check valve in an underground vault. The second is located at the intersection of Derry and 29th Streets in the City of Harrisburg and consists of a ten-inch diameter pipe connection with a water meter and check valve in an underground vault. The third is located in the Edgemont area of Susquehanna Township along Edgemont Road that consists of a ten-inch diameter pipe connection with a water meter and check valve in an underground vault. The Fourth is located at 28th Street and Locust Lane in Susquehanna Township that consists of an eight-inch diameter pipe connection with a water meter and check valve in an underground vault. Finally a raw water interconnect located off the 42" main line, near the Rockville Bridge supplies untreated water to United's Water Filtration Plant on an emergency basis.

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Our system utilizes two pumping stations to convey water and maintain adequate distribution system pressure. The Gatehouse Pump Station located at Reservoir Park, utilizes two 400 HP horizontal split case centrifugal pumps, each rated for 8,700-GPM, to transfer finished water from the Lower Reservoir to the Upper Reservoir. A booster station, located in Susquehanna Township serves the Union Square Industrial Park. It includes a dual parallel pumping system, which consists of a 750-GPM triplex constant pressure booster pumping system and a 1,000-GPM-fire pump.

BUREAU OF WATER

2006

ACCOMPLISHMENT REPORT

DEHART RESERVOIR AND WATERSHED



Essential functions are to manage the DeHart Dam facilities and watershed operations. The division consists of a Maintenance/DeHart Superintendent, Operations Superintendent/Watershed Manager and Maintenance Specialist.

In 2006, potassium permanganate was not required for the control of taste and odor associated with algae and organic matter in the Reservoir.

A bypass from the reservoir is mandated by the State Water Allocations Permit to provide a minimum daily conservation release of 6.5 MGD for the purpose of preserving the natural flow of Clark Creek. The rate of this flow is monitored at the Carsonville Weir; located downstream of the spillway. Throughout 2006, the required minimum daily conservation release was maintained or exceeded (See Exhibit E for additional details).

The development of the Watershed Management Plan continued with the enhancement of the Water Quality Monitoring Program. Monitoring provides information on the depth from which to draw off water of optimal quality. Applications of copper sulfate were avoided during 2006, which saved the City money in terms of the treatment cost for algae control.

The Secchi Disc Depth is a measure of transparency of the water that assists the watershed manager in determining the amount of algae growth present. The transparency of the water in DeHart Reservoir stayed above the level proven to show eutrophic conditions (i.e., excessive algae growth) throughout 2006.

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Other Accomplishments in 2006:

- Completed and passed the Annual PA Department of Environmental Protection Dam Inspection with comments.
- Utilized the DeHart database and Water Quality Monitoring Program to select appropriate depth for the raw water intake.
- Continued the Vegetation Control Plan on the dam breast.
- Coordinated Timber harvest on 253 acres of watershed.
- Coordinated pulpwood harvest on 200 acres of watershed.
- Repaired three concrete slabs in spillway.

OPERATIONS/MAINTENANCE DIVISION



Essential functions are to operate and maintain all buildings and equipment at the Dr. Robert E. Young Water Services Center, DeHart Dam, Front Street River Intake and Pump Station, Gatehouse, Lower Reservoir, Upper Reservoir, and the Union Square Booster Station. The division consists of a DeHart/Maintenance Superintendent, Operations Superintendent/Watershed Manager, (9) Water Plant Operators, (3) Maintenance Specialists, and (1) Electrician.

Through 2006, a total of 3,121.92 million gallons (MG) of water were withdrawn from the combined sources: 3,121.92 MG from the DeHart Reservoir, 0 MG from the Susquehanna River, and 0 MG was supplied to United Water Pennsylvania via the Emergency Raw Water Interconnect (refer to Exhibit B for additional details). This combined total represents an average daily withdrawal of 8.55 MG, which was in compliance with the State Water Allocation Permit.

Water treatment includes the addition of lime and alum (aluminum sulfate) at the head of the plant for coagulation, chlorine prior to filtration for disinfection, fluoride to prevent dental caries, soda ash and caustic soda for pH/alkalinity adjustment, and finally, zinc orthophosphate for Distribution System corrosion control.

Other Accomplishments in 2006:

- Conducted numerous tours of the Bureau Facilities for schools and other civic groups throughout the year.

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- Continued utilizing the computerized Maintenance Program to schedule preventive maintenance and equipment repairs at all Bureau Facilities.
- Continued utilizing zinc orthophosphate for corrosion control within the distribution system.
- Conducted several Water Treatment workshops in conjunction with the Pa-AWWA.
- Received the Partnership for Safe Water, Director's Award for the fifth consecutive year.
- Installed thermostats in order to improve energy savings throughout the facility and stations.
- Completed repairs to Flocculation Paddles for the "A" train.
- Replaced chutes on Thickeners.

WATER QUALITY DIVISION



The Colilert method was utilized during 2006 to test for total coliform and *Escherichia coli*; there were no positive water samples in the distribution system during the yearly monitoring period. The Bureau of Water is required by Pennsylvania Department of Environmental Protection (PA DEP) to test throughout the year for certain parameters, including trihalomethanes (TTHM's), haloacetic acids (HAA's), total organic carbon (TOC's), volatile organic compounds (VOC's), synthetic organic compounds (SOC's), nitrates, radiologicals and zinc (Refer to Exhibit A for the 2006 test results).

A change in the corrosion control treatment process in 1999 required the City of Harrisburg to conduct extensive lead and copper monitoring within the distribution system in June and October of 2000. The results of that monitoring were well below State and Federal, lead and copper regulations. Extensive testing continued in 2001 throughout the distribution system, on the basis of those results, the Bureau was granted reduced monitoring status, to a tri-annual schedule for copper and lead analyses. The Copper and Lead Survey analyses in 2004 revealed that the copper and lead concentrations at the residential tap were well below the MCL of <0.015 mg/l for lead and <1.3 mg/l for copper. This Survey again verified the success of our Corrosion Control Program. As a result of our successful program, we were again awarded a triennial testing schedule, which will be conducted in 2007.

Our Water Quality Monitoring Program continued to ensure production of high quality water. In addition to onsite monitoring at the Water Treatment Facility, weekly distribution samples were collected and analyzed for free and total chlorine, temperature, pH, iron, total dissolved solids, total

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hardness, alkalinity and phosphate. This data allows us to monitor the water quality throughout the distribution system.

A Tier III violation occurred when the contract laboratory neglected to run all of the total Trihalomethane tests in the third quarter. Our part of missing this oversight resulted in a monitoring violation. While at no time was the Public in any danger, we are required to issue a Tier III Public Notification explaining to our customers what happened, why, and what is being done to correct this problem in the future.

The Water Quality Lab handles customer complaints ranging from discolored water to odor. All complaints are logged and investigated to determine and eliminate the cause, to the consumer's satisfaction. All 24 water complaints during 2006 were determined to be the result of lack of maintenance of the consumers' hot water heater; water main or service line breaks or flow disruption from Fire Hydrants or Fire Line usage.

Other Accomplishments in 2006:

- The 2005 Consumer Confidence Report was transmitted to all consumers before June 1, 2006 as required by the Federal Safe Drinking Water Act.
- The WQA successfully completed the annual Bacteriological Performance Evaluation as required by the Microbiological Laboratory's Certification to perform testing for the presence of Coliform and E. Coli bacteria.
- Developed sampling schedules for Cryptosporidium and Disinfection Byproducts.

DISTRIBUTION DIVISION



The Distribution Division is assigned responsibility for operations, maintenance and repair of over 250 miles of distribution system piping and appurtenances including approximately 1,690 fire hydrants and 3,540 valves. This Division is directly responsible for the installation of water meters, meter readings and maintenance of associated records for approximately 18,000 domestic services, 2,450 commercial services, and 435 institutional services and connections. They provide all service taps, hydrant flow tests, service application review and approval in accordance with the City Codified Ordinances and the Rules and Regulations of The Harrisburg Authority, and maintain

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records as required. They perform all Pennsylvania One-Call System utility locations for water and sewer mains. The Division consists of a Distribution Superintendent, (7) Service Persons, (2) Water Meter Readers, (2) Laborers, and (1) Secretary.

Other Accomplishments in 2006:

- Completed the annual employee Right-to-Know and Confined Space training.
- Attended the PA One-Call System Exposition.
- Repaired 23 main breaks.
- Completed 20 final street restorations.
- Excavated 120 curb boxes for delinquent termination.
- Completed 8714 water and sewer locates for the PA One-Call System.
- Assisted other City Bureau's and Department's as requested.
- Repaired or Replaced 123 Fire Hydrants.

BUREAU OF WATER

2007

GOALS AND OBJECTIVES

DEHART DAM

- Address comments in the PA Department of Environmental Protection's Annual Dam Inspection Report.
- With the approval of The Harrisburg Authority, plan a timber harvest and a pulpwood harvest sale in the areas indicated in the Forest Stewardship Plan.
- Continue to monitor Clark Creek and the watershed to determine sources of nutrient and bacterial input.
- Hire an independent laboratory to analyze algae samples of DeHart Reservoir on a quarterly basis.
- Remove dead trees from the shoreline of the reservoir.
- Continue to clean vegetation from the mountain line access road.
- Have access roads throughout the facility repaved.
- Continue to implement chlorophyll A sampling on the reservoir.
- Continue to assist other departments and divisions as required.

OPERATIONS/MAINTENANCE DIVISION

- Continue to process data collection and reporting with the use of a computer database to ensure that all Federal, State and Local water quality standards are met.
- Continue to monitor utility and chemical expenses in order to reduce the operational costs associated with all Bureau facilities.
- Continue the preventive maintenance program.
- Continue to provide the necessary submittals to continue to receive the Partnership For Safe Water' Directors Award.
- Continue to work in conjunction with the Pa-AWWA in conducting/facilitating various training workshops and seminars throughout the year.
- Repair raw water PRV.
- Repair pumps at Reservoir Park Gatehouse

WATER QUALITY DIVISION

- The Microbiological Laboratory will continue to be operated and maintained in accordance with the standards necessary to perform quality bacteriological testing and to maintain certification.

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- Continue the in-house program of analyzing chemical parameter unknowns by operations staff to assure precision and accuracy of equipment, methods, and operator's technique.
- Evaluate methodology and equipment of chemical testing procedures to ensure accurate results.
- Implement and expand the QA/QC protocols within the operations lab and in the field during sampling.
- The WQA will continue responding to consumer complaints in an effort to promote confidence in our drinking water.
- The WQA will update the SOP's for all parameters analyzed in the Microbiological and Operations laboratories.

DISTRIBUTION DIVISION

- Attend monthly Bureau Safety Committee and Staff meetings.
- Continue water sales to bulk water haulers.
- Continue system-wide leak detection.
- Continue to work on meter report forms.
- Continue the delinquent shut-off program and to shut-off properties on the vacant coded list in conjunction with the Bureau of Operations & Revenue.
- Continue to repair or replace fire hydrants as required.
- Continue to assist other departments and divisions as required.
- Continue to work on street cut restorations.